

Figure 1

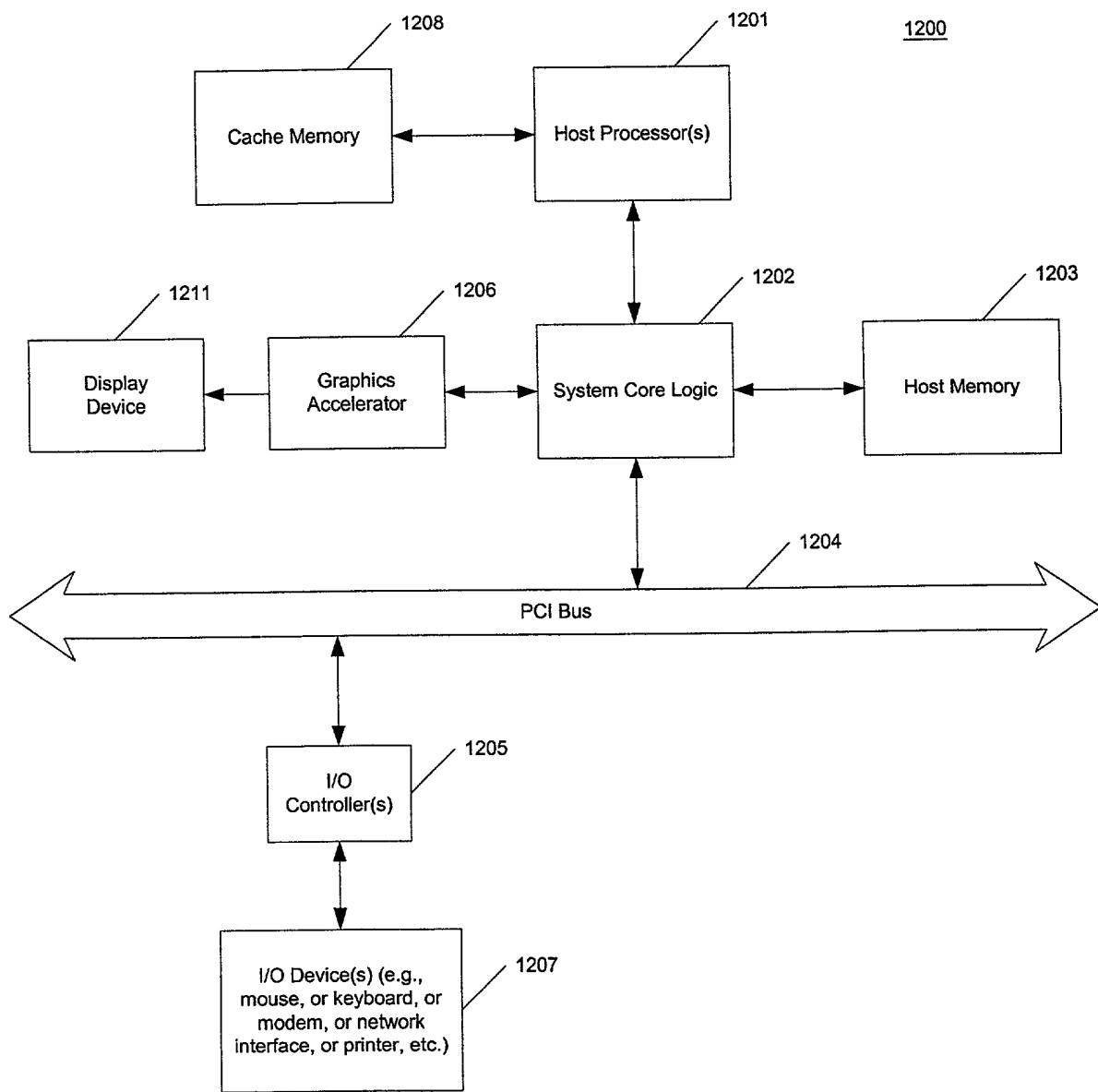


Figure 2

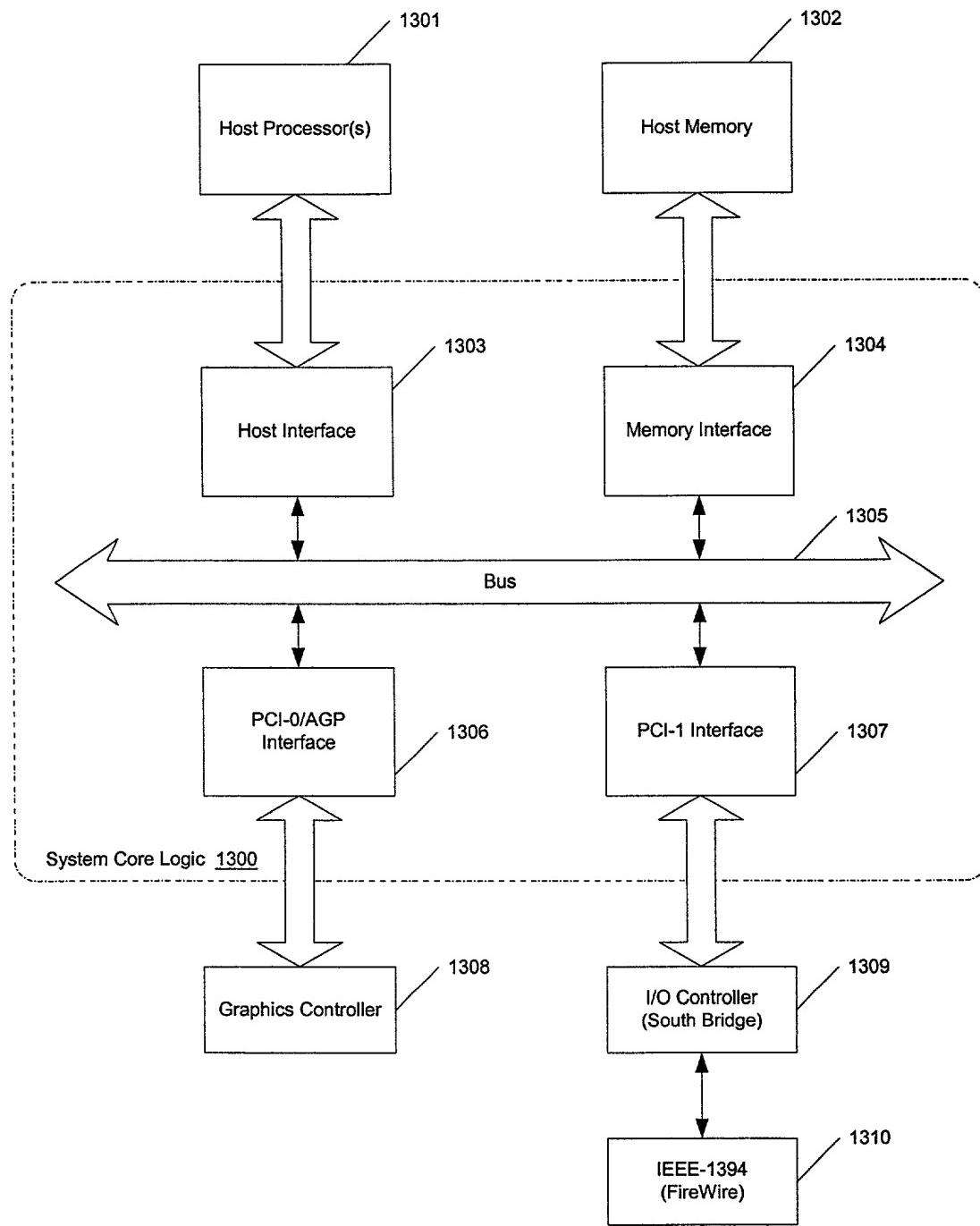


Figure 3

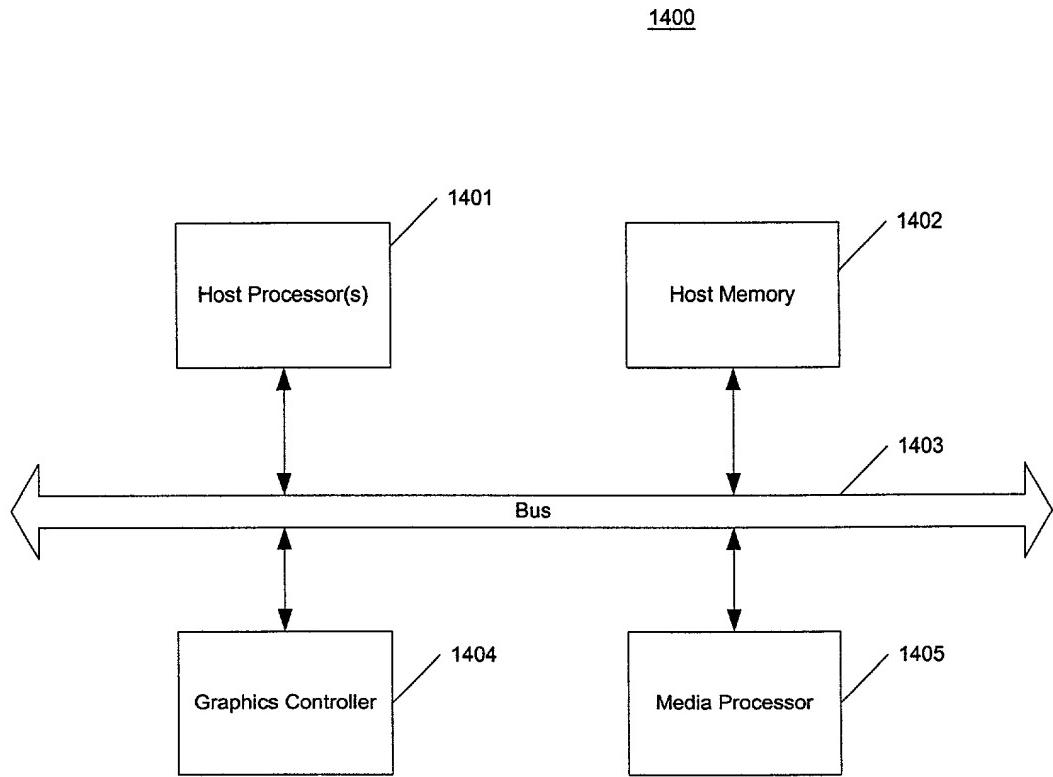


Figure 4A

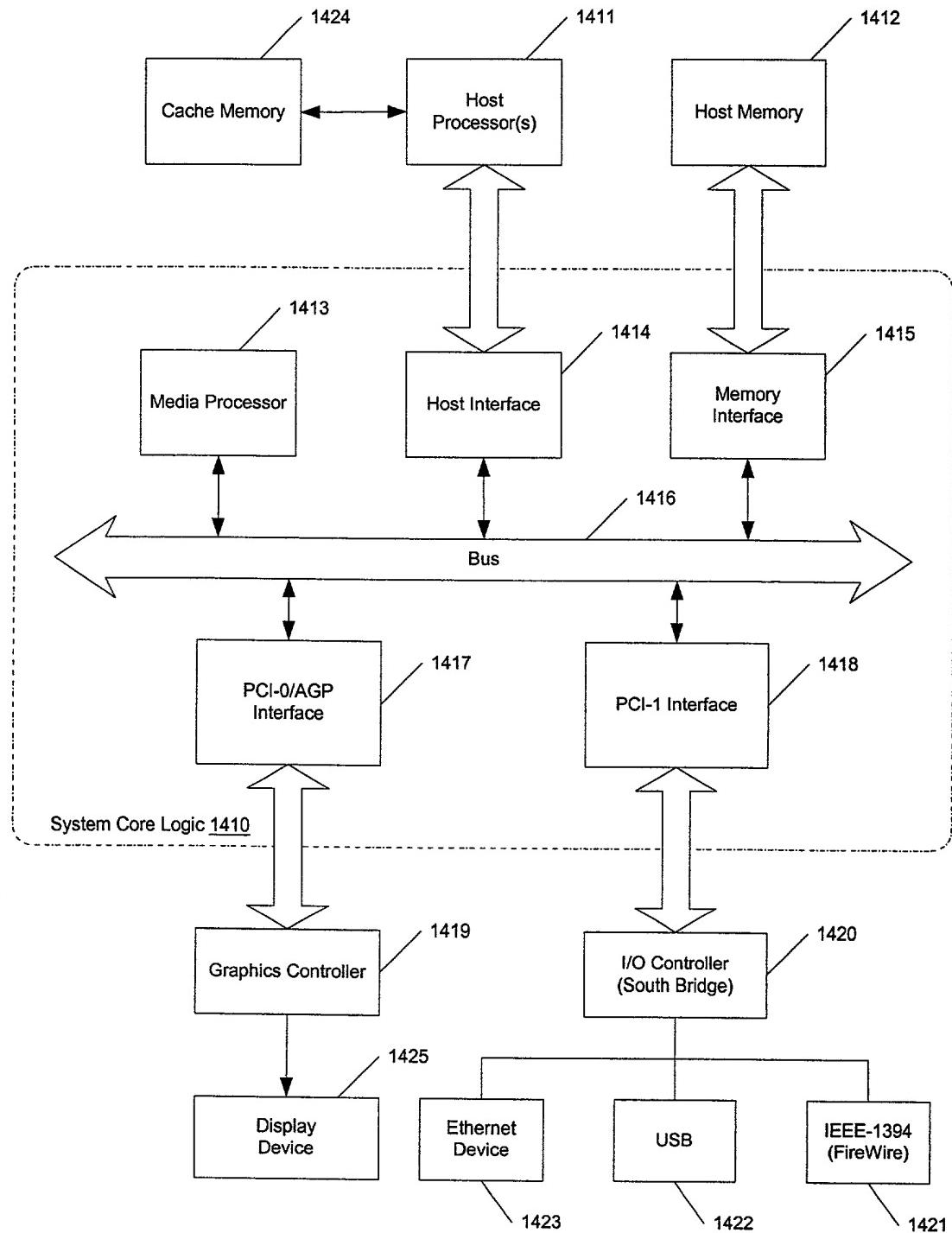


Figure 4B

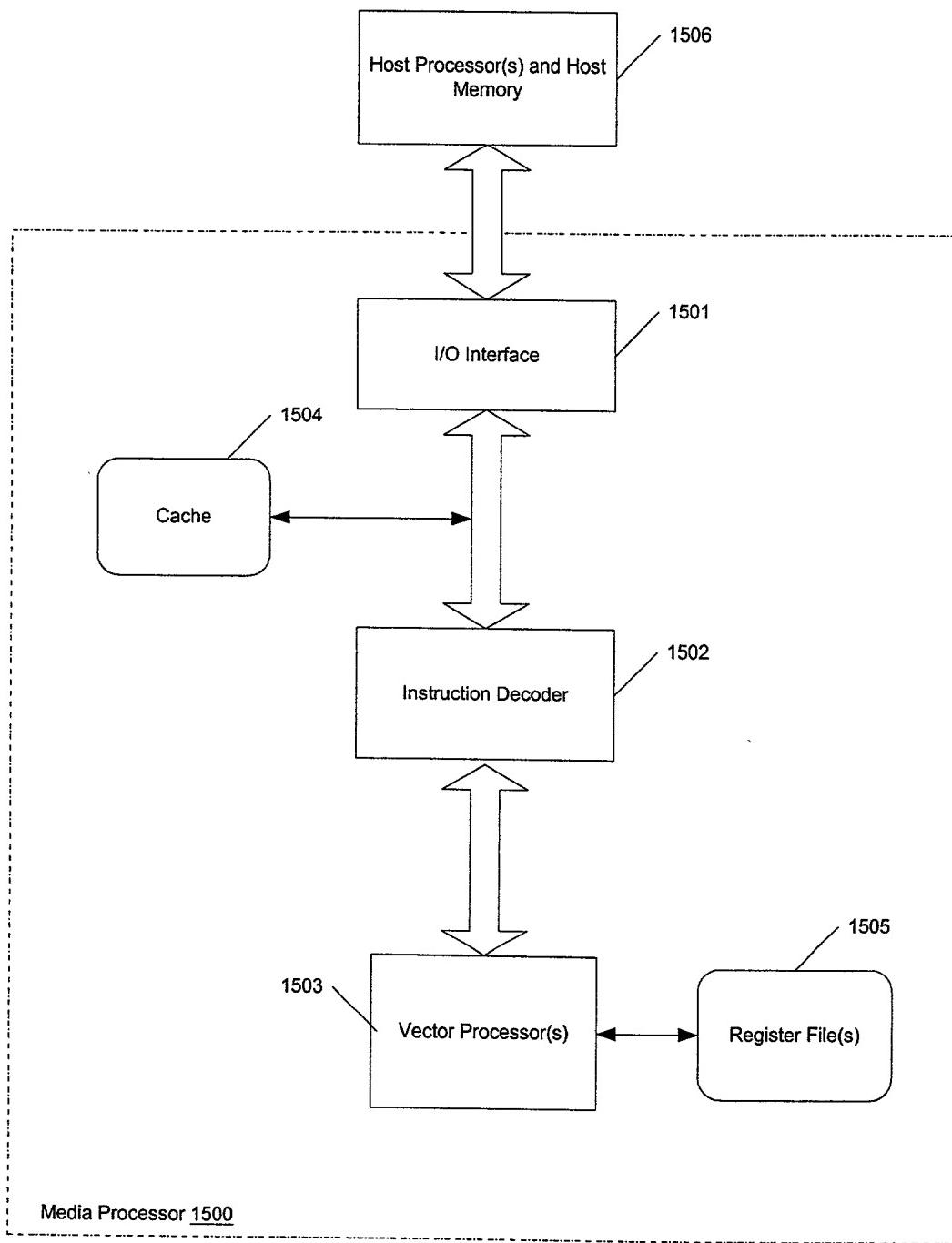


Figure 5A

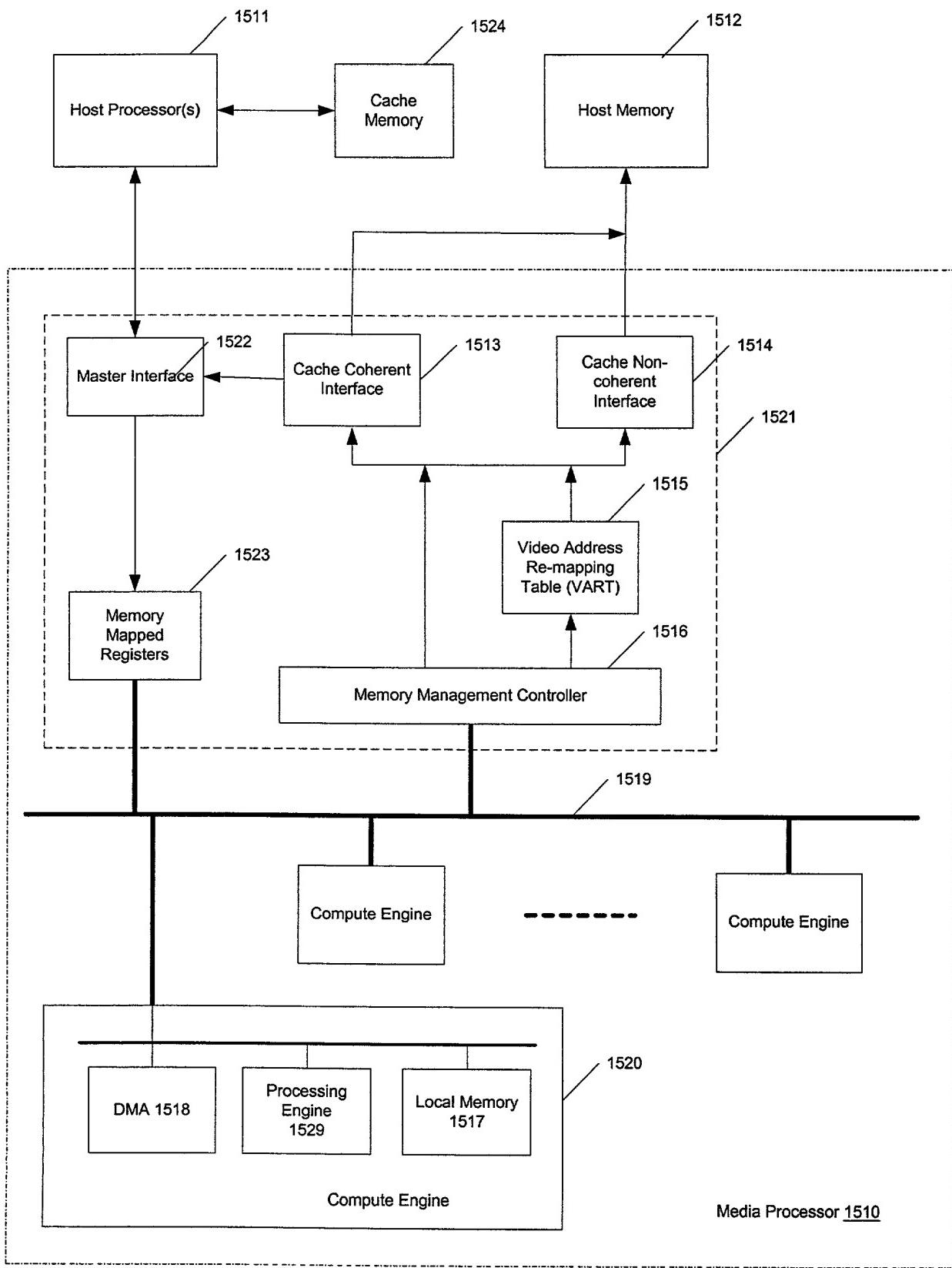


Figure 5B

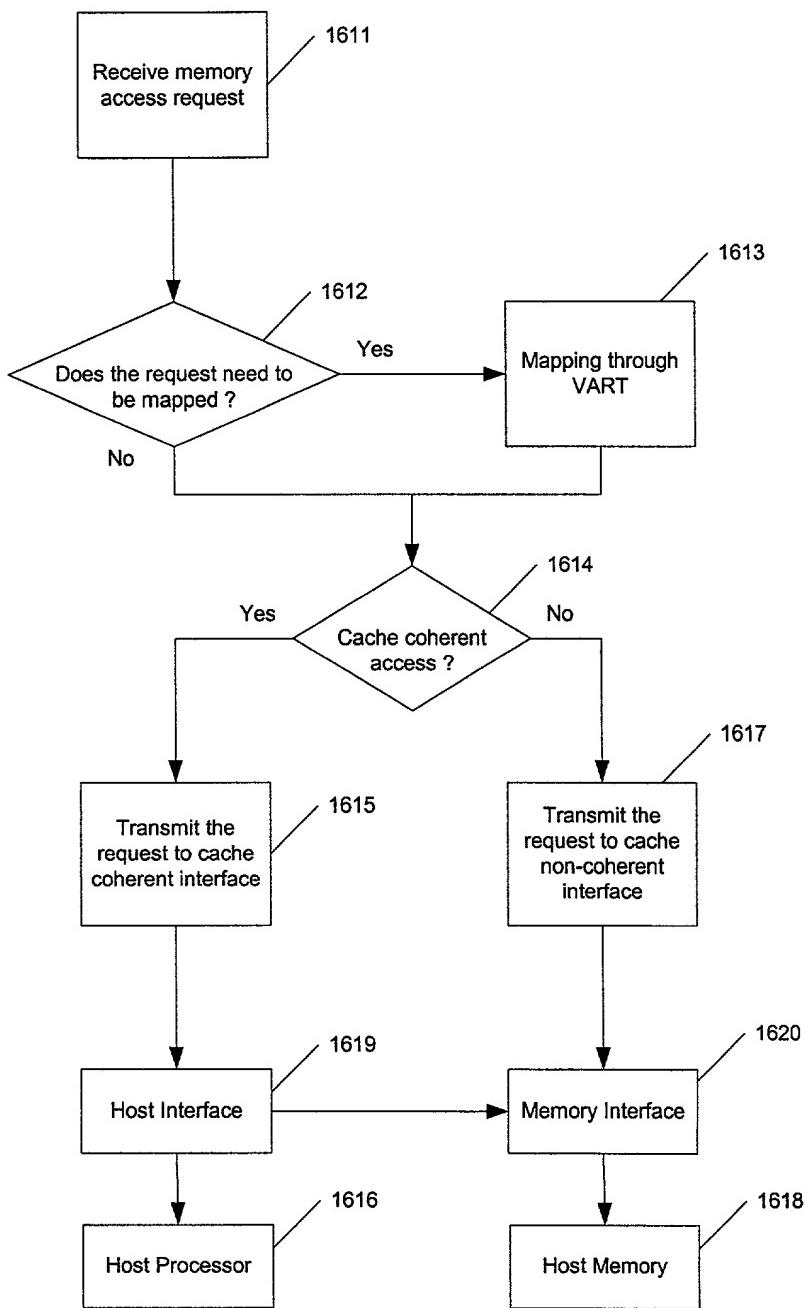


Figure 6

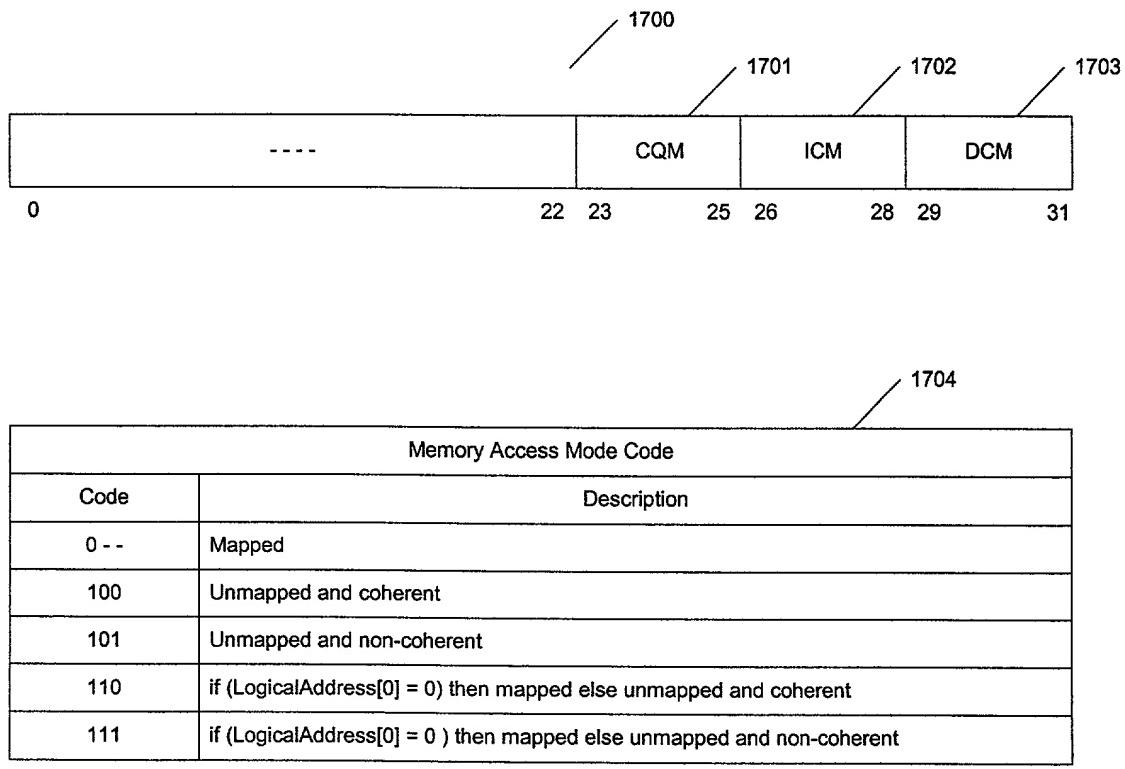


Figure 7

1800

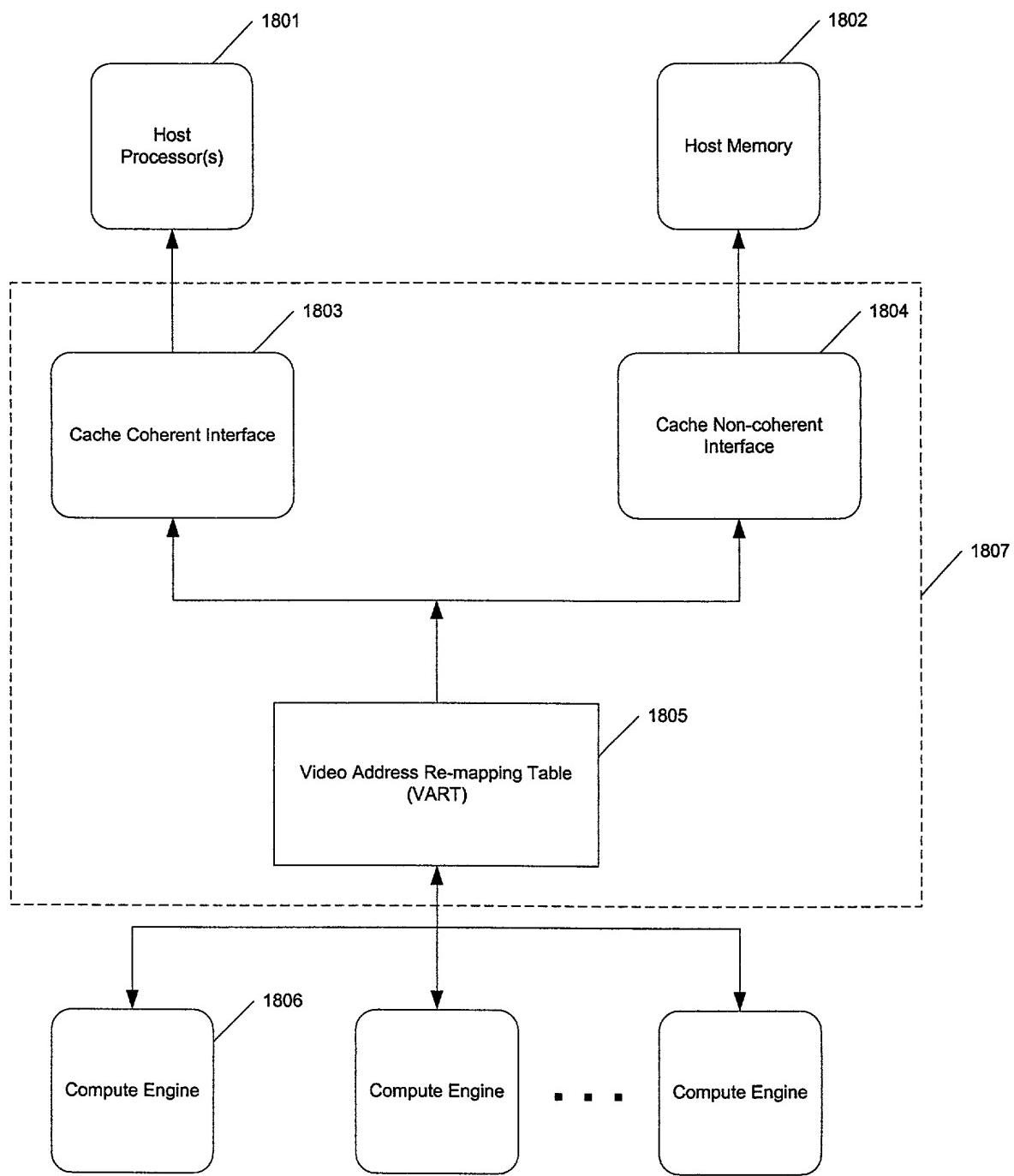


Figure 8

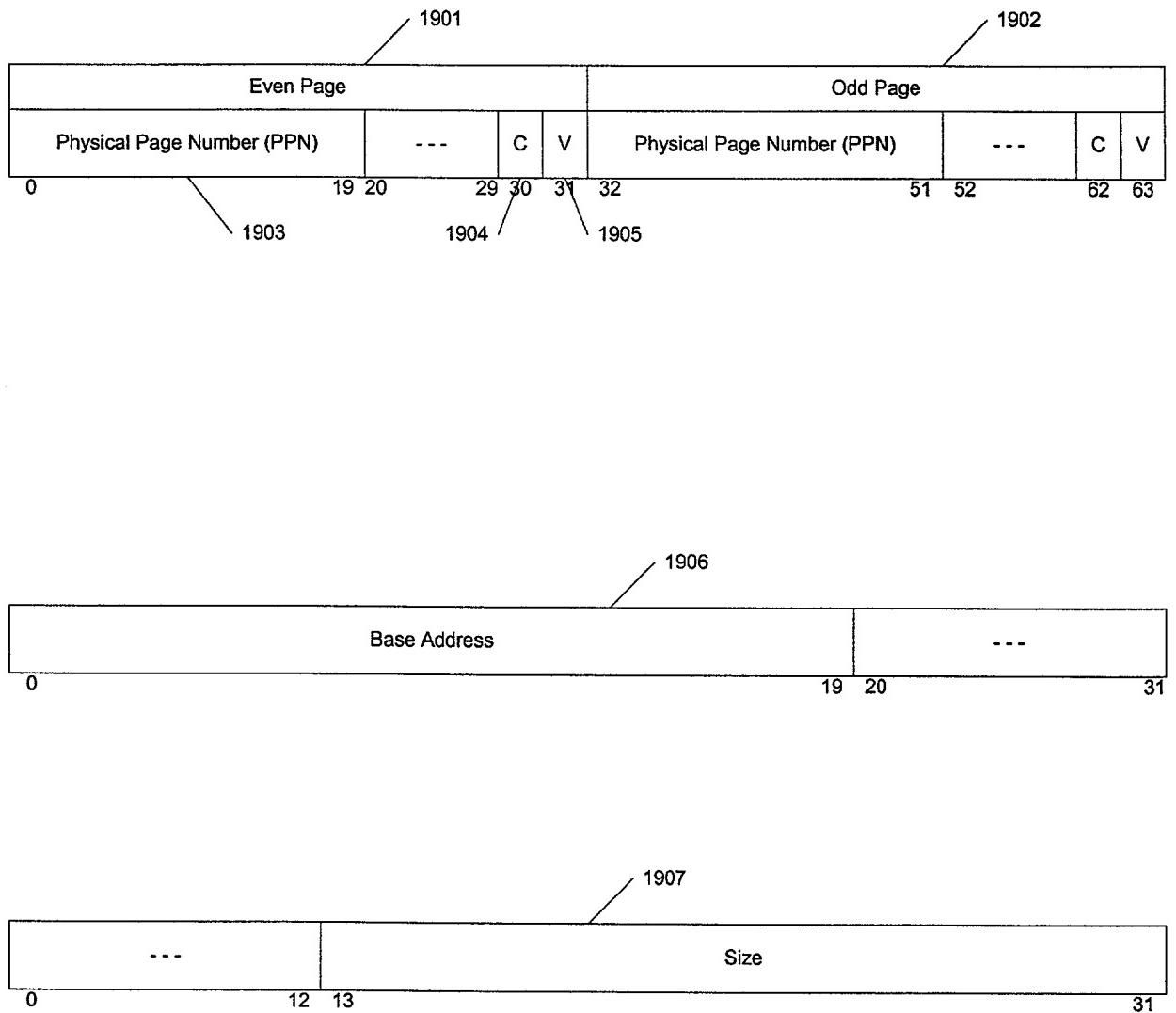


Figure 9

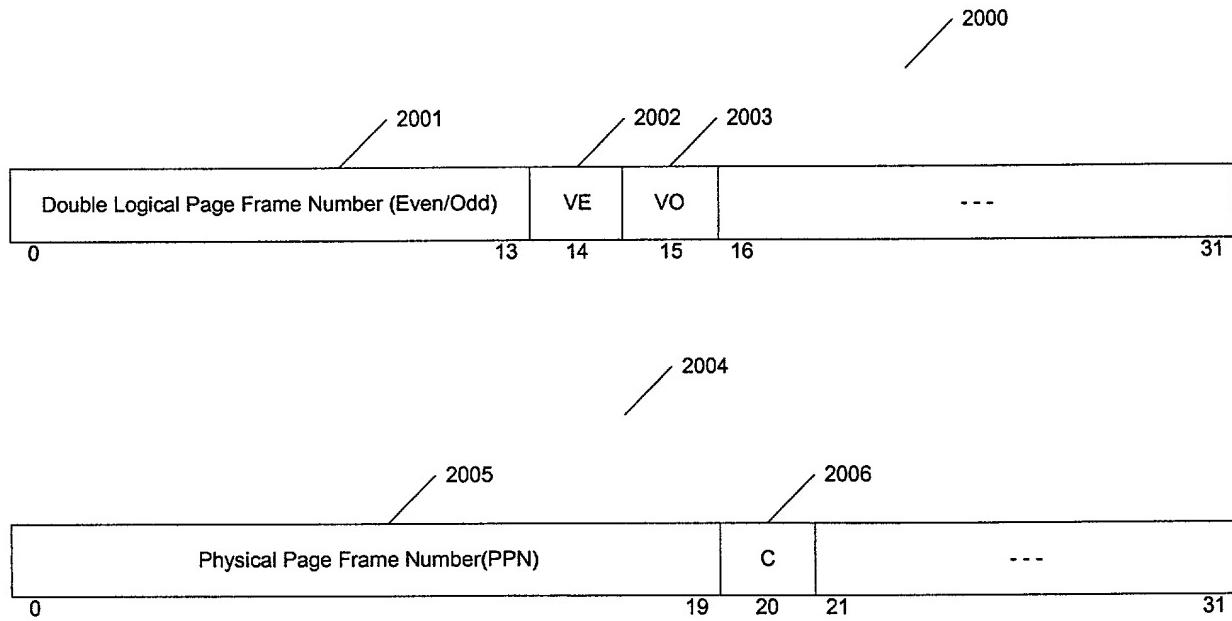


Figure 10A

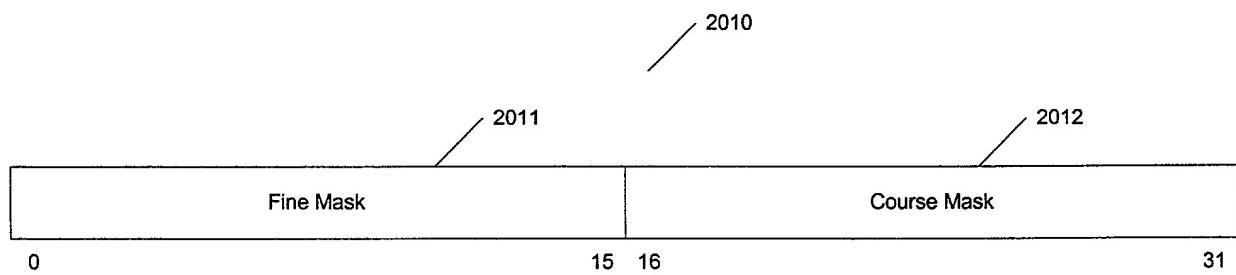


Figure 10B

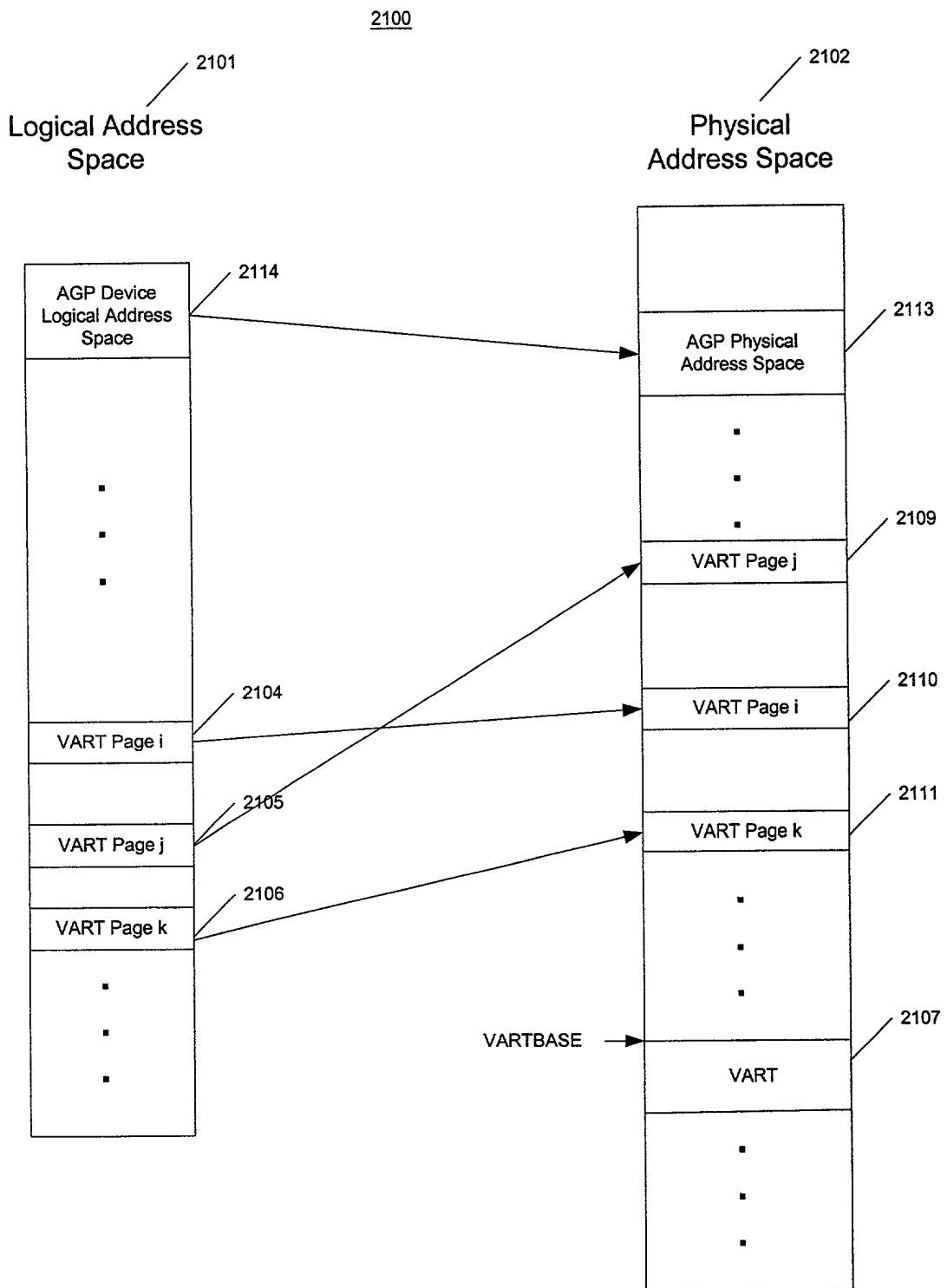


Figure 11

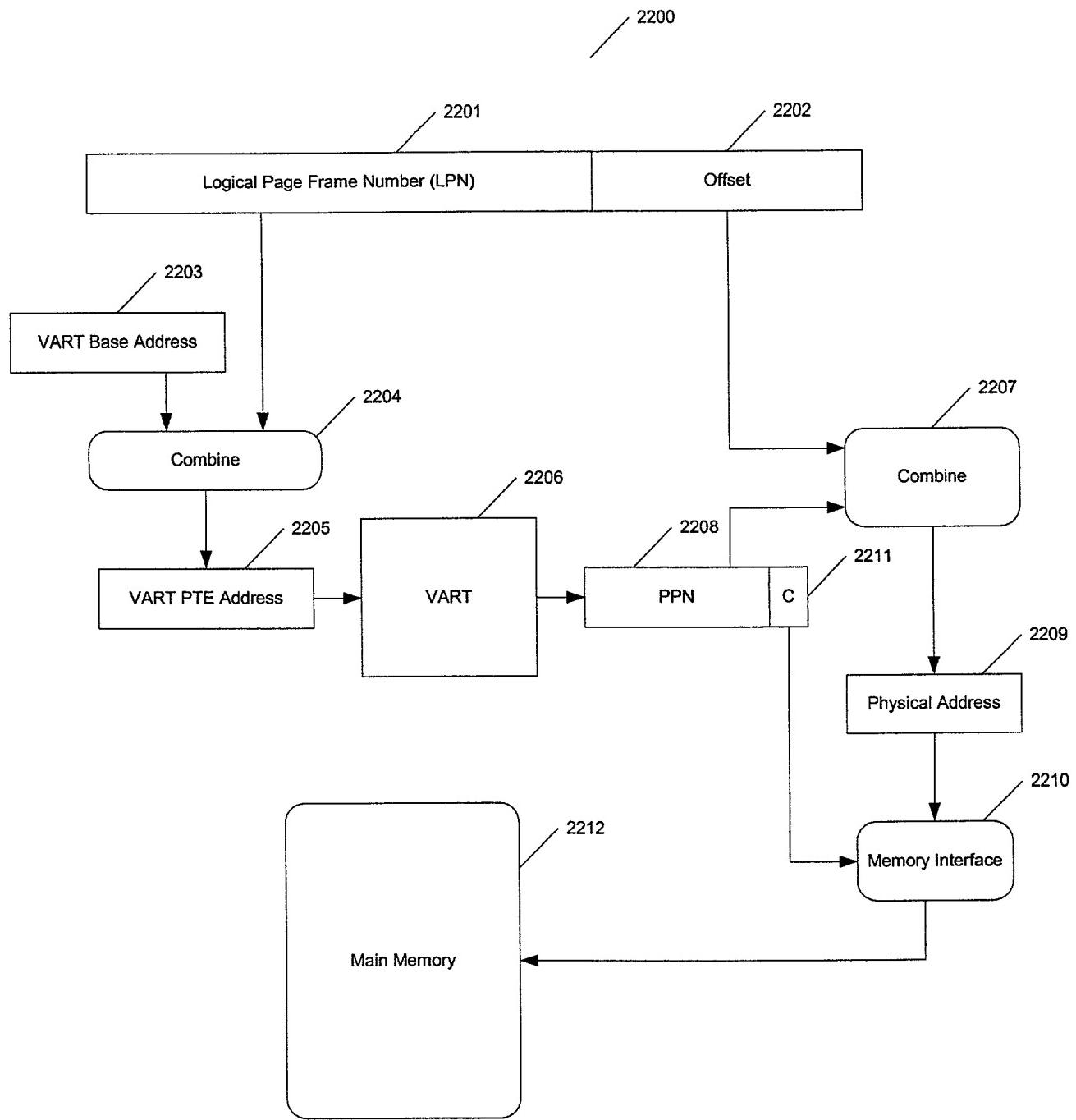


Figure 12

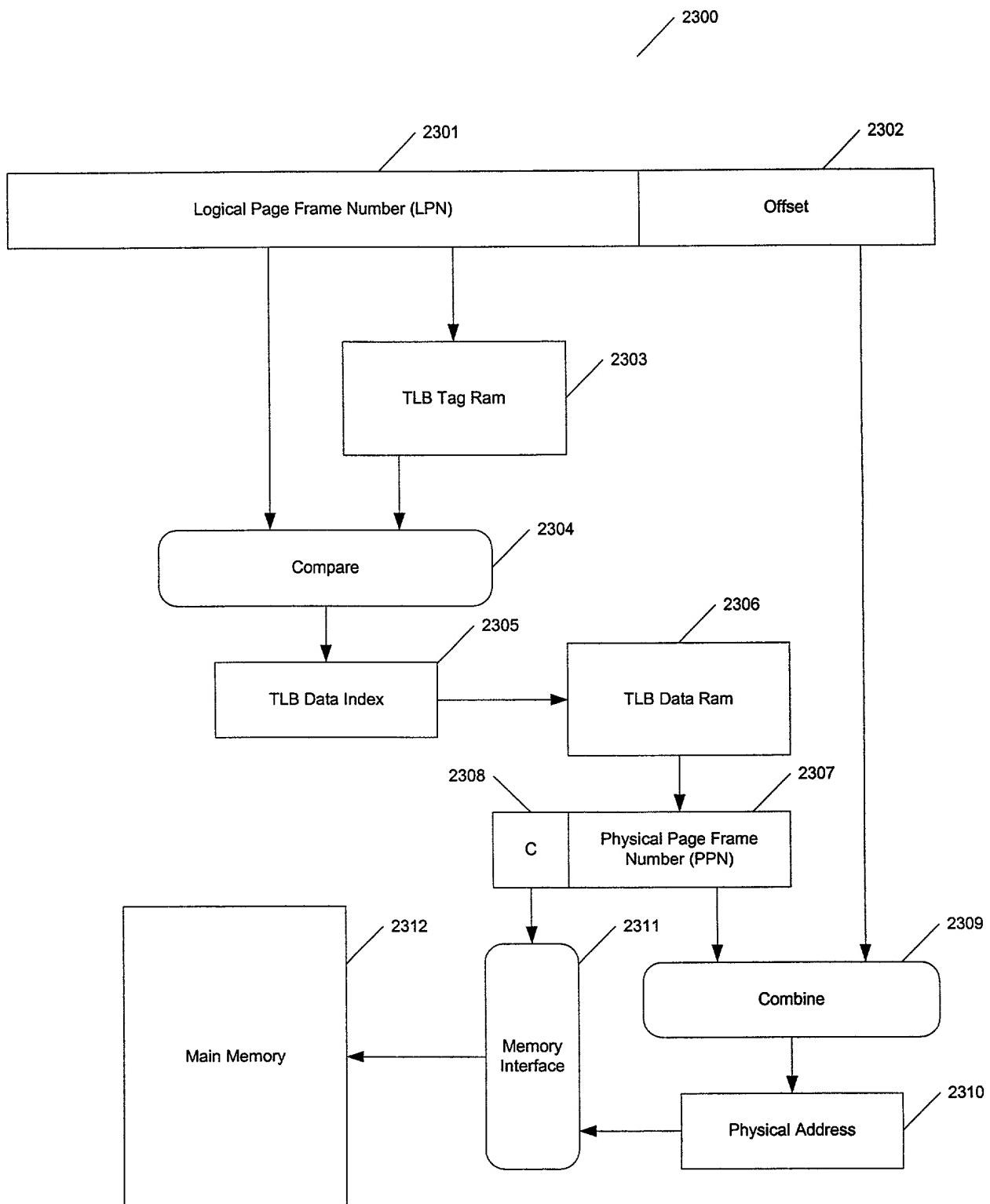


Figure 13

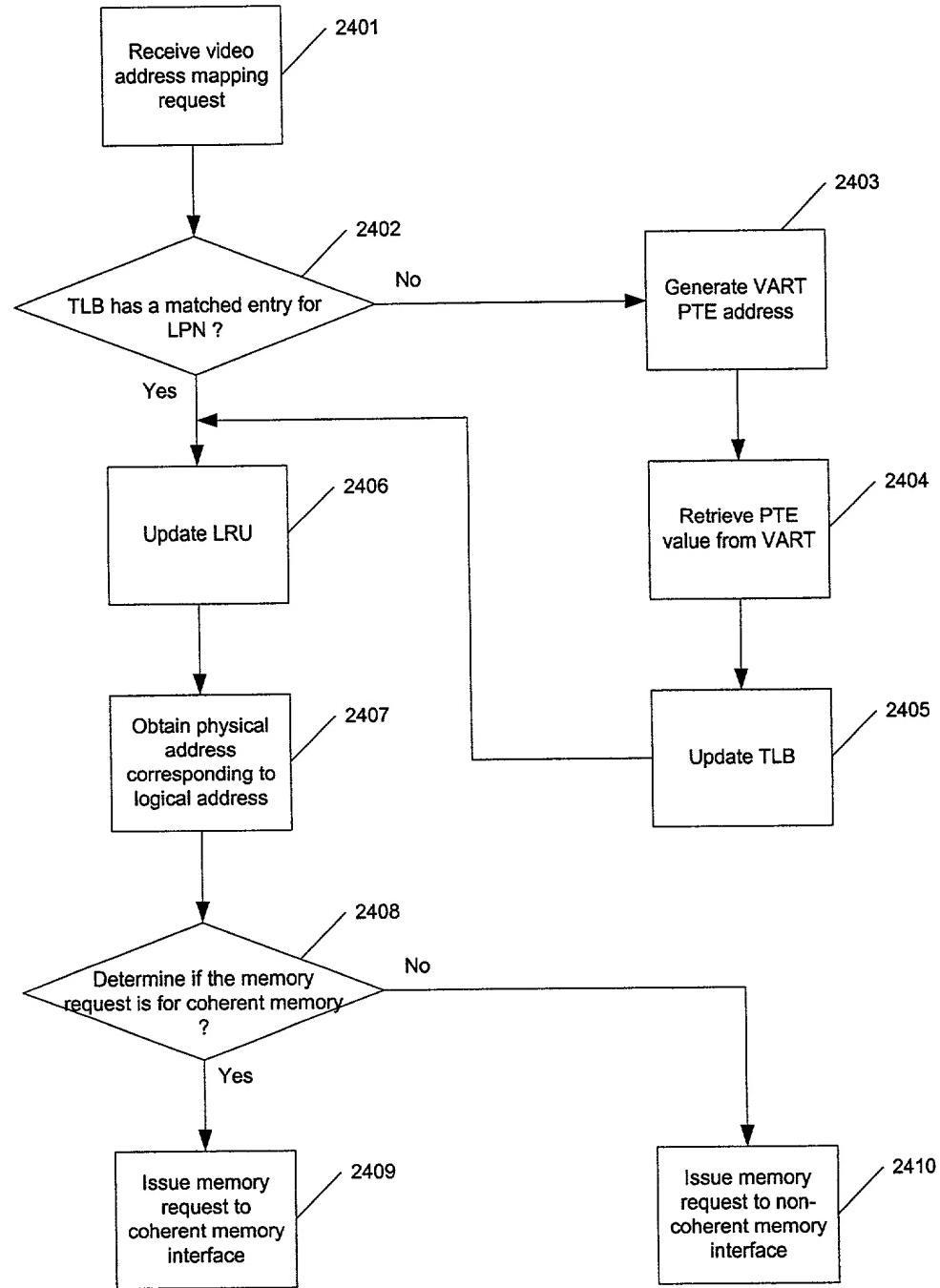


Figure 14

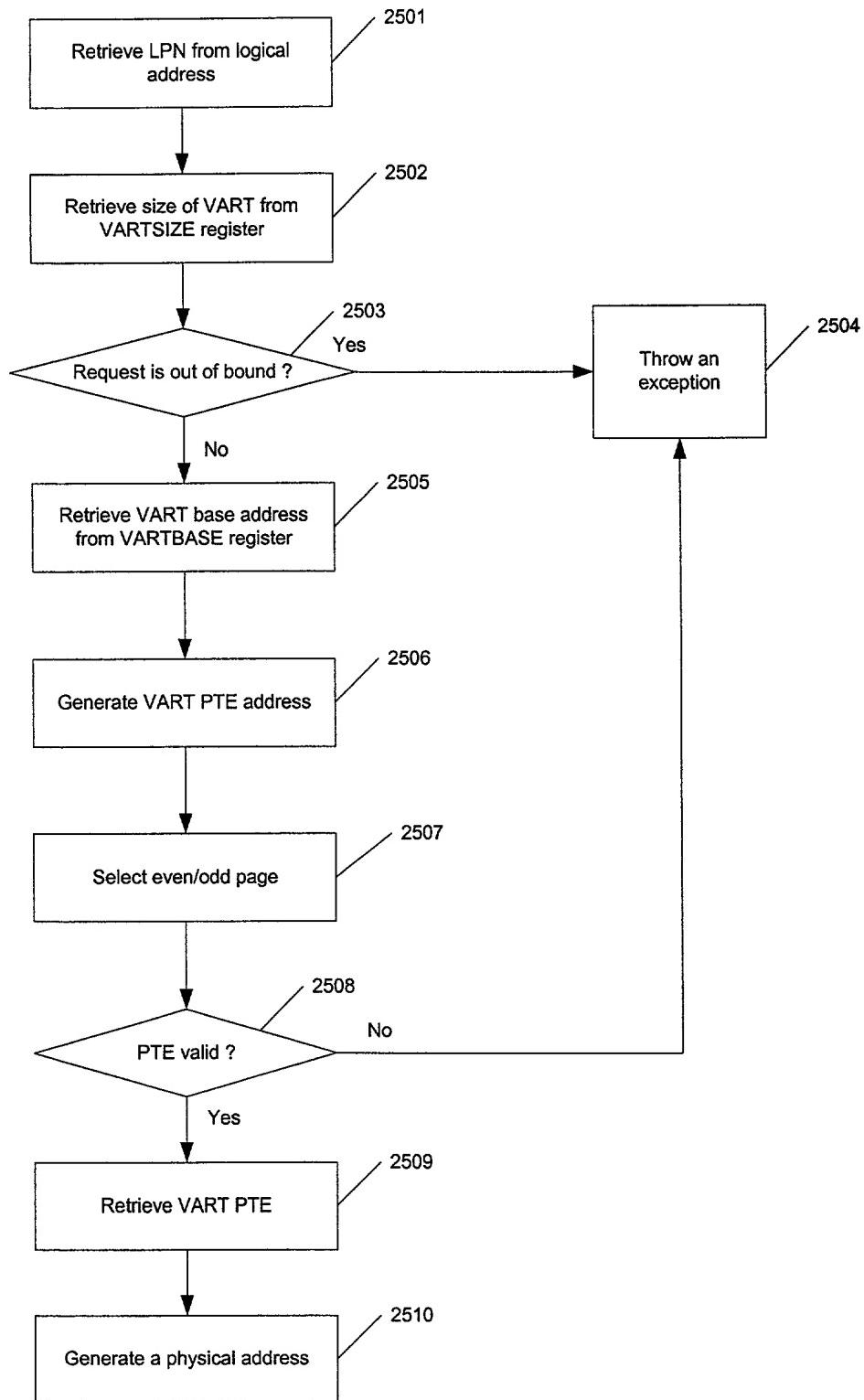


Figure 15

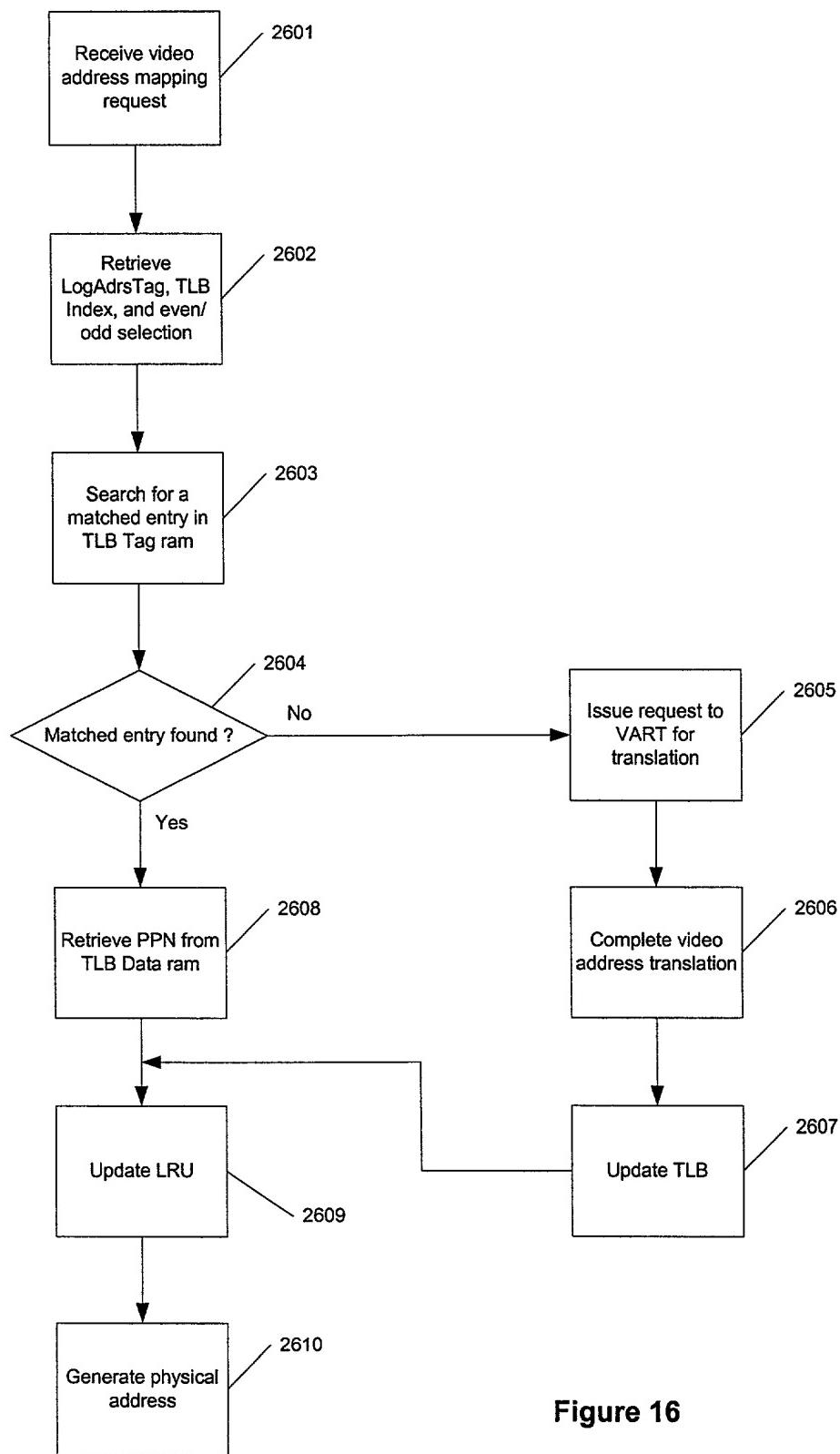


Figure 16

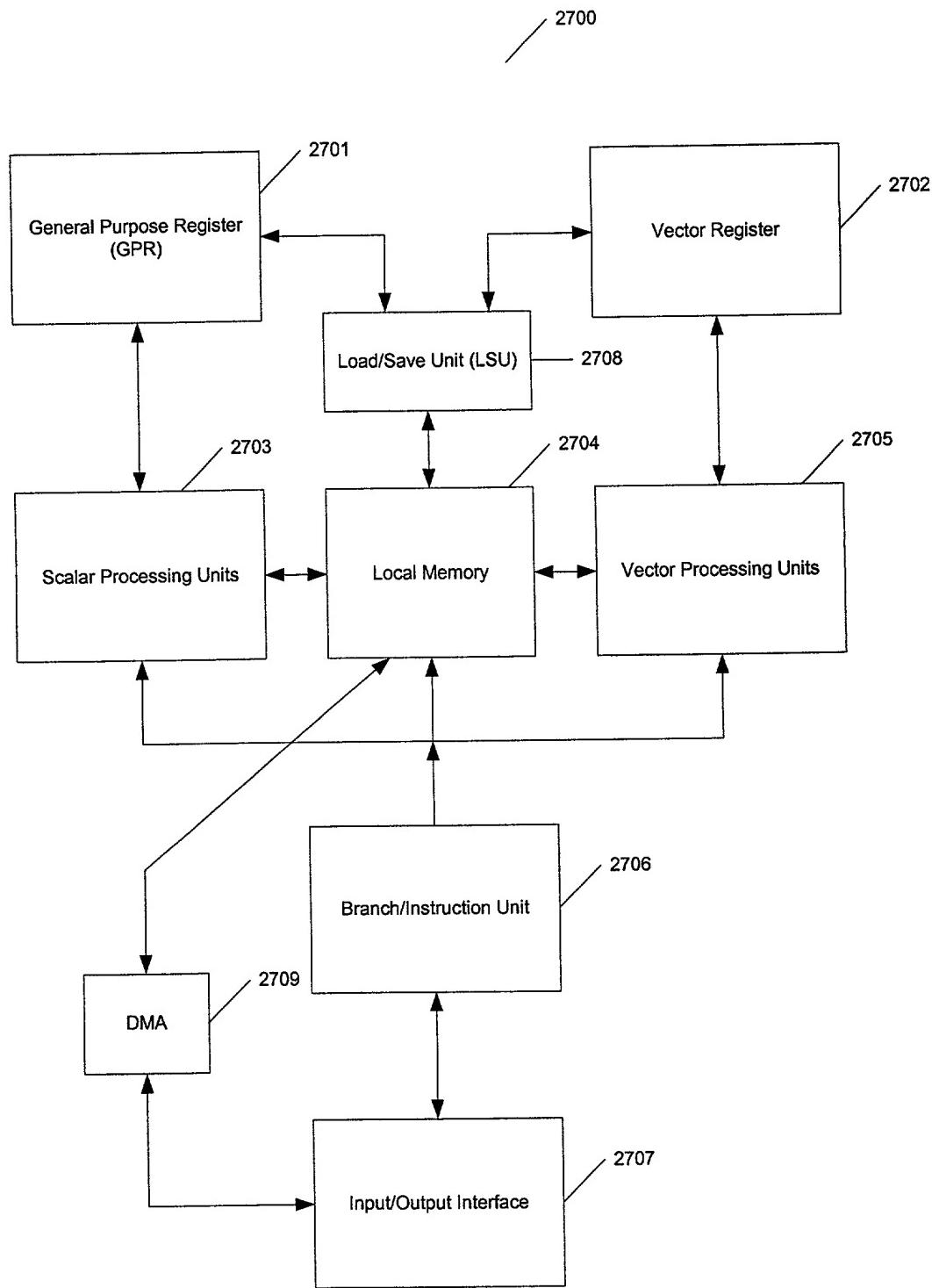


Figure 17

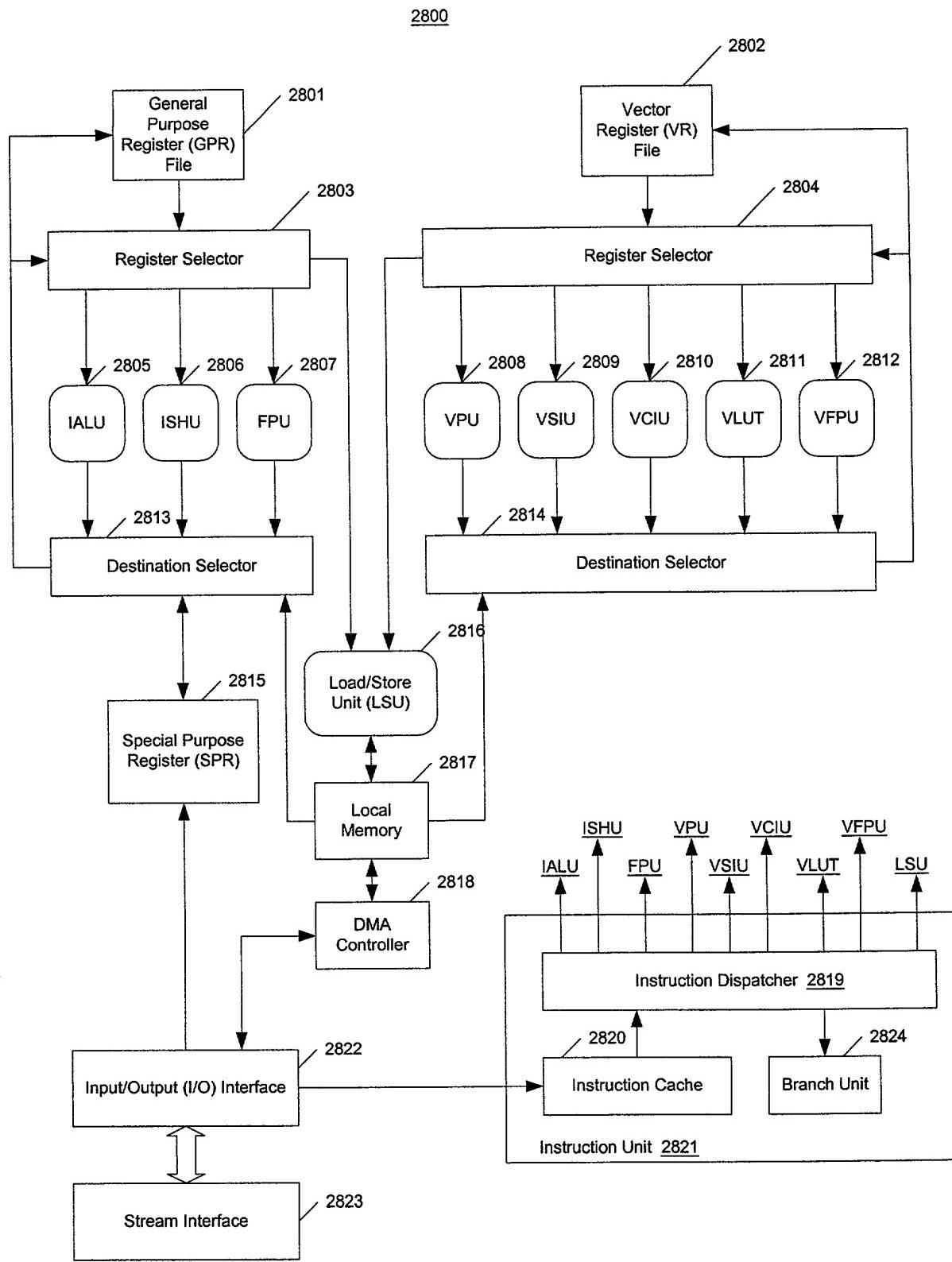


Figure 18

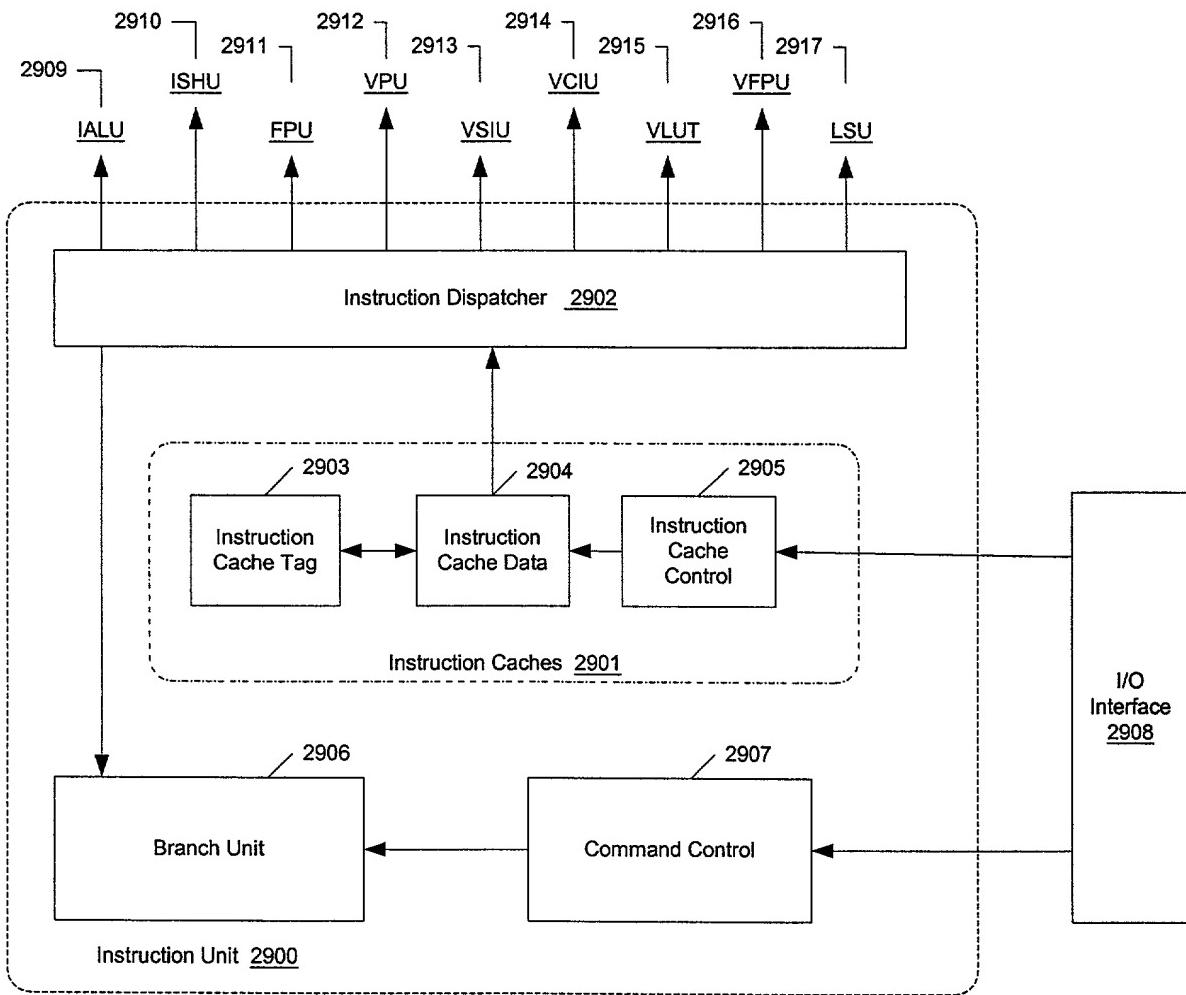


Figure 19A

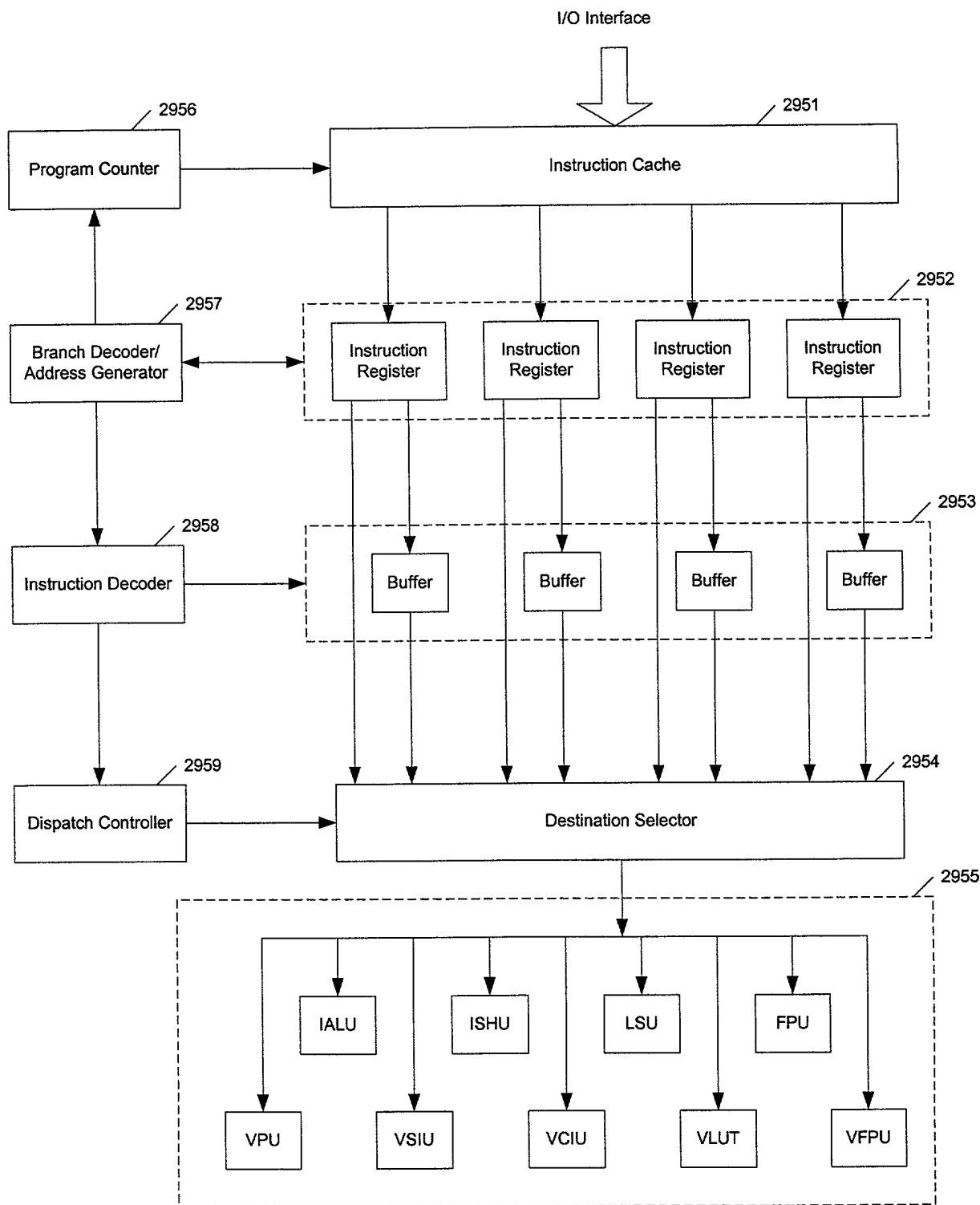


Figure 19B

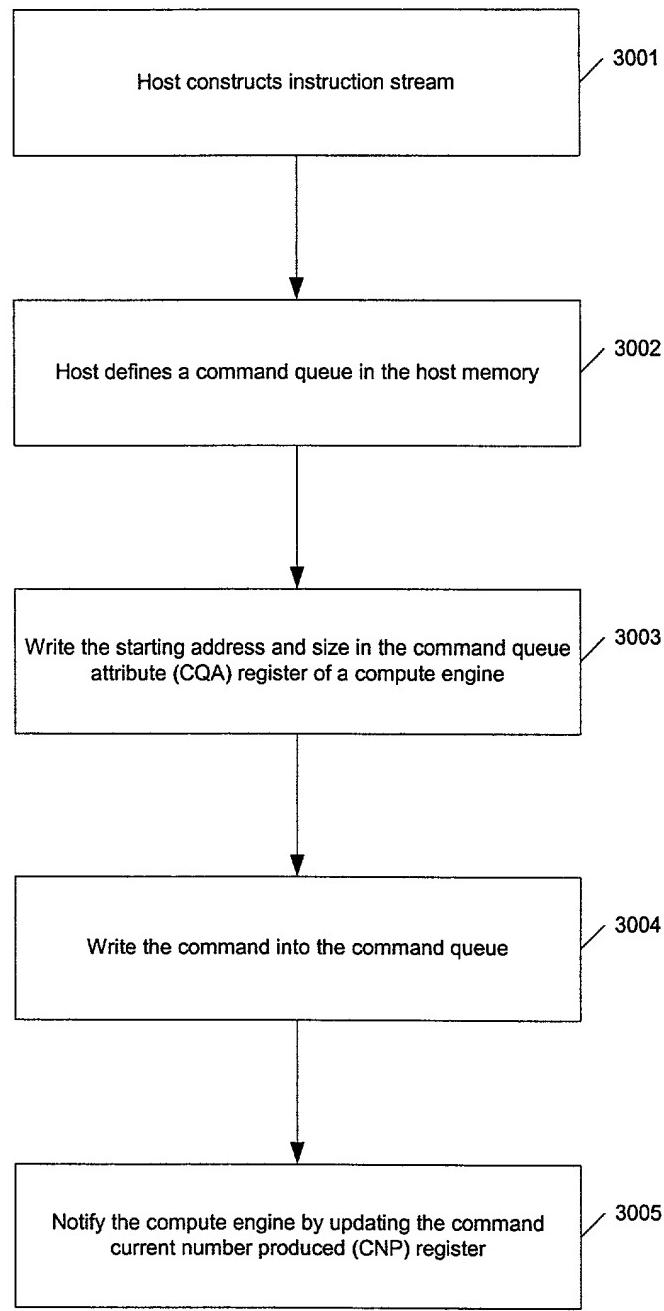


Figure 20A

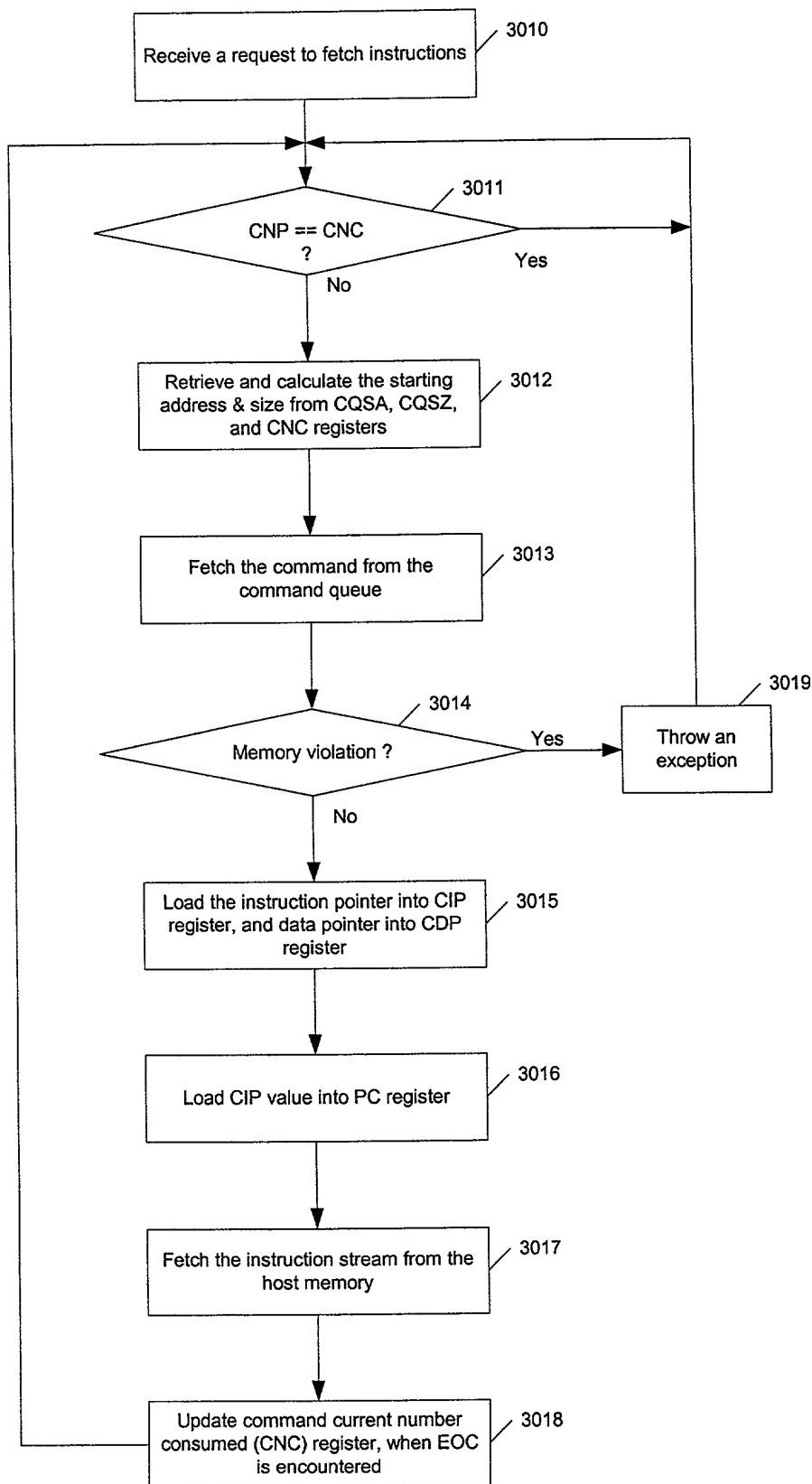


Figure 20B

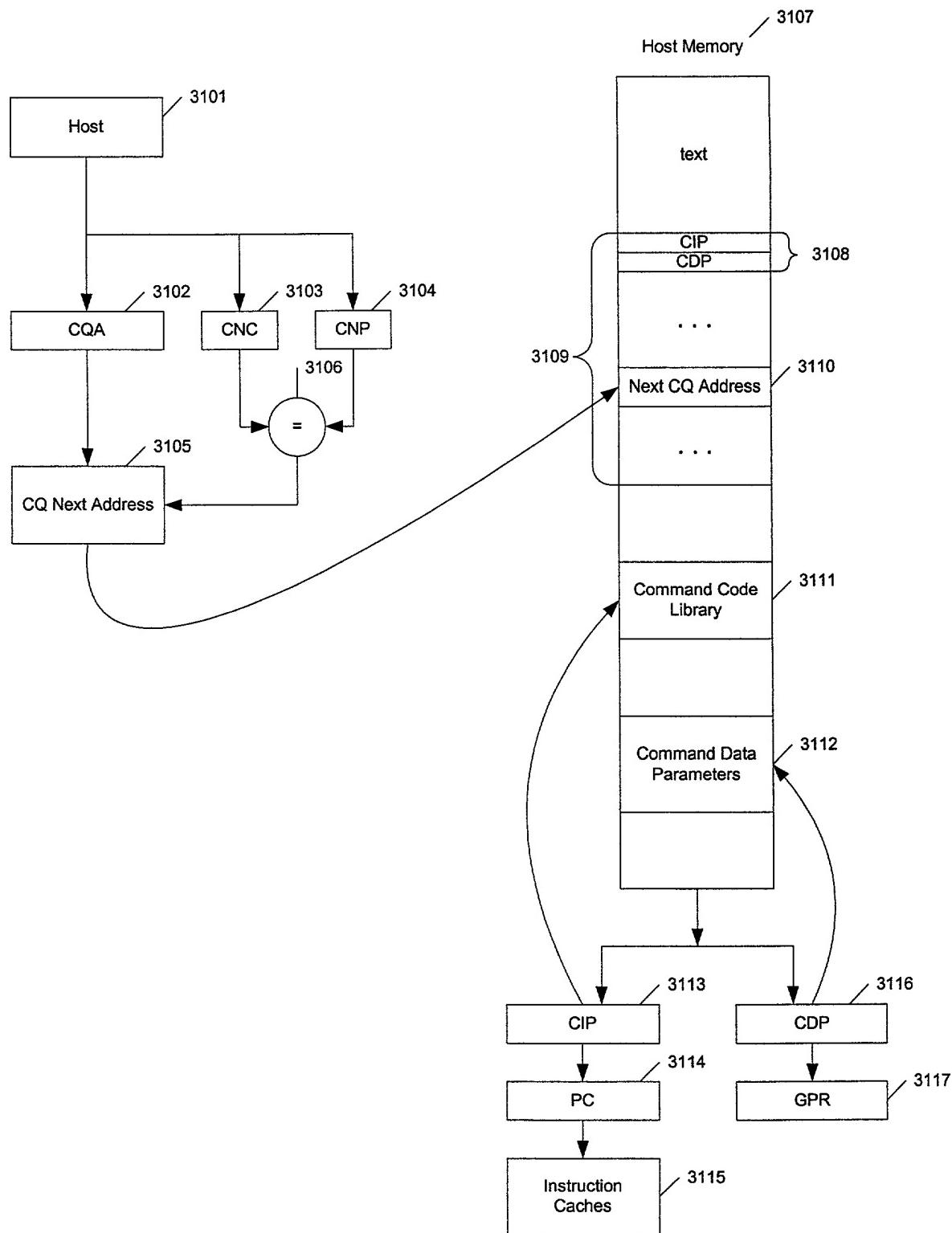


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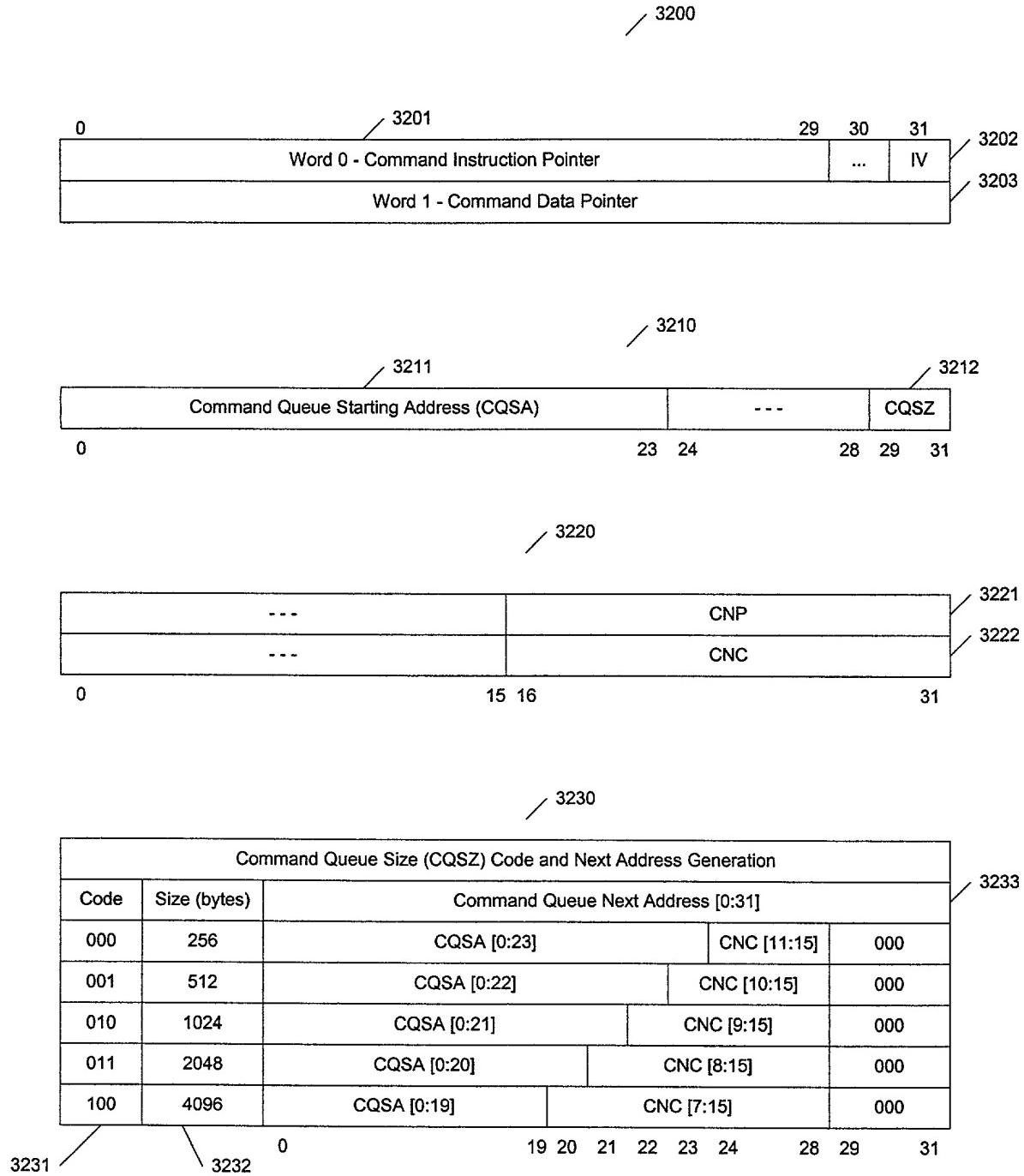


Figure 22

The diagram illustrates a priority queue structure. At the top, the number 3300 is connected by a line to the first row of a table. The table has two columns: 'Priority Number' and 'Functional Group Name'. The 'Priority Number' column contains integers from 0 to 7. The 'Functional Group Name' column lists corresponding units: IALU, ISHU, LSU, VPU, VSIU, VCIU, VLUT, and BRU. To the right of the table, three numbers are aligned vertically: 3301 at the top, 3302 in the middle, and 3301 at the bottom. A line connects 3301 at the top to the last row of the table, and another line connects 3302 to the second-to-last row.

Priority Number	Functional Group Name
0	IALU - Integer Arithmetic/Logical Unit
1	ISHU - Integer Shift Unit
2	LSU - Load/Store Unit
3	VPU - Vector Permute Unit
4	VSIU - Vector Simple Integer Unit
5	VCIU - Vector Complex Integer Unit
6	VLUT - Vector Look-up Table Unit
7	BRU - Branch Unit

Figure 23

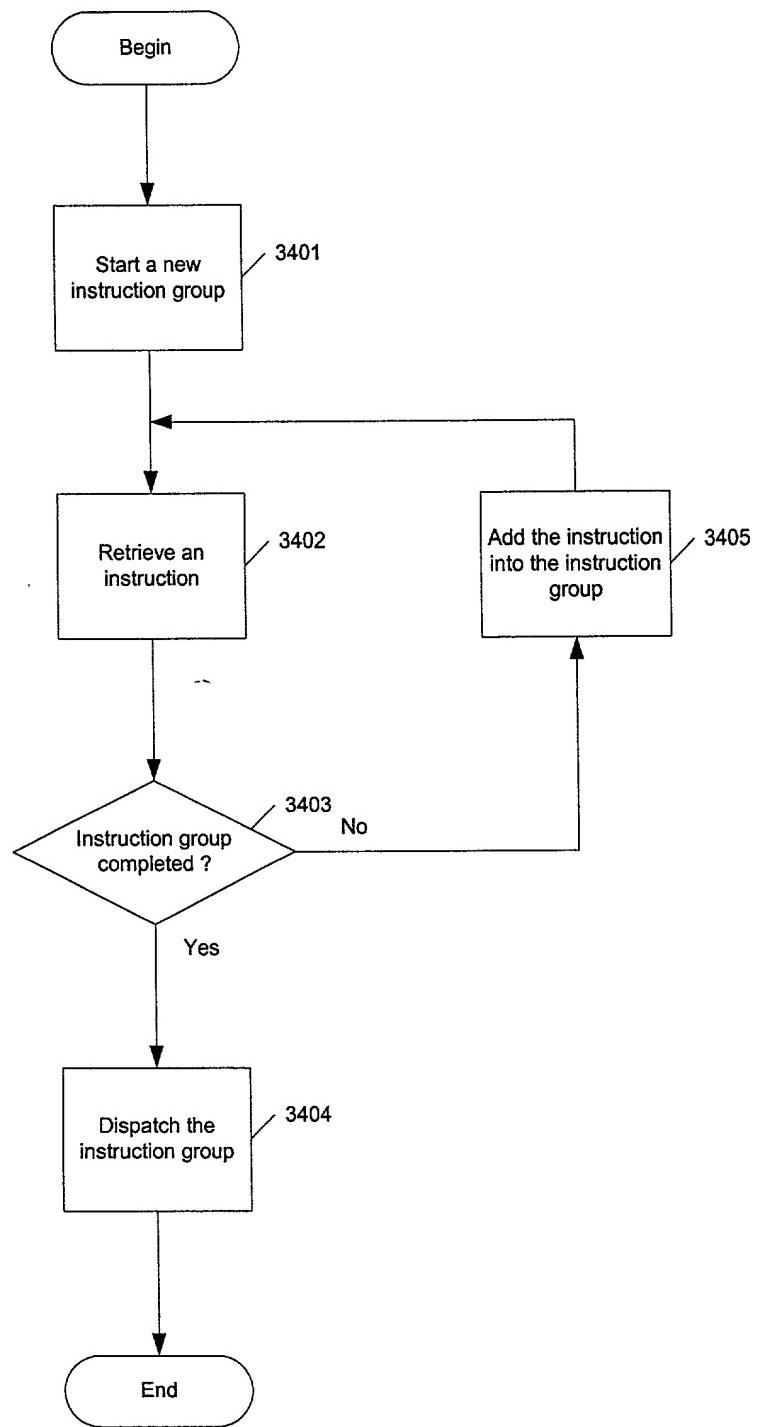


Figure 24

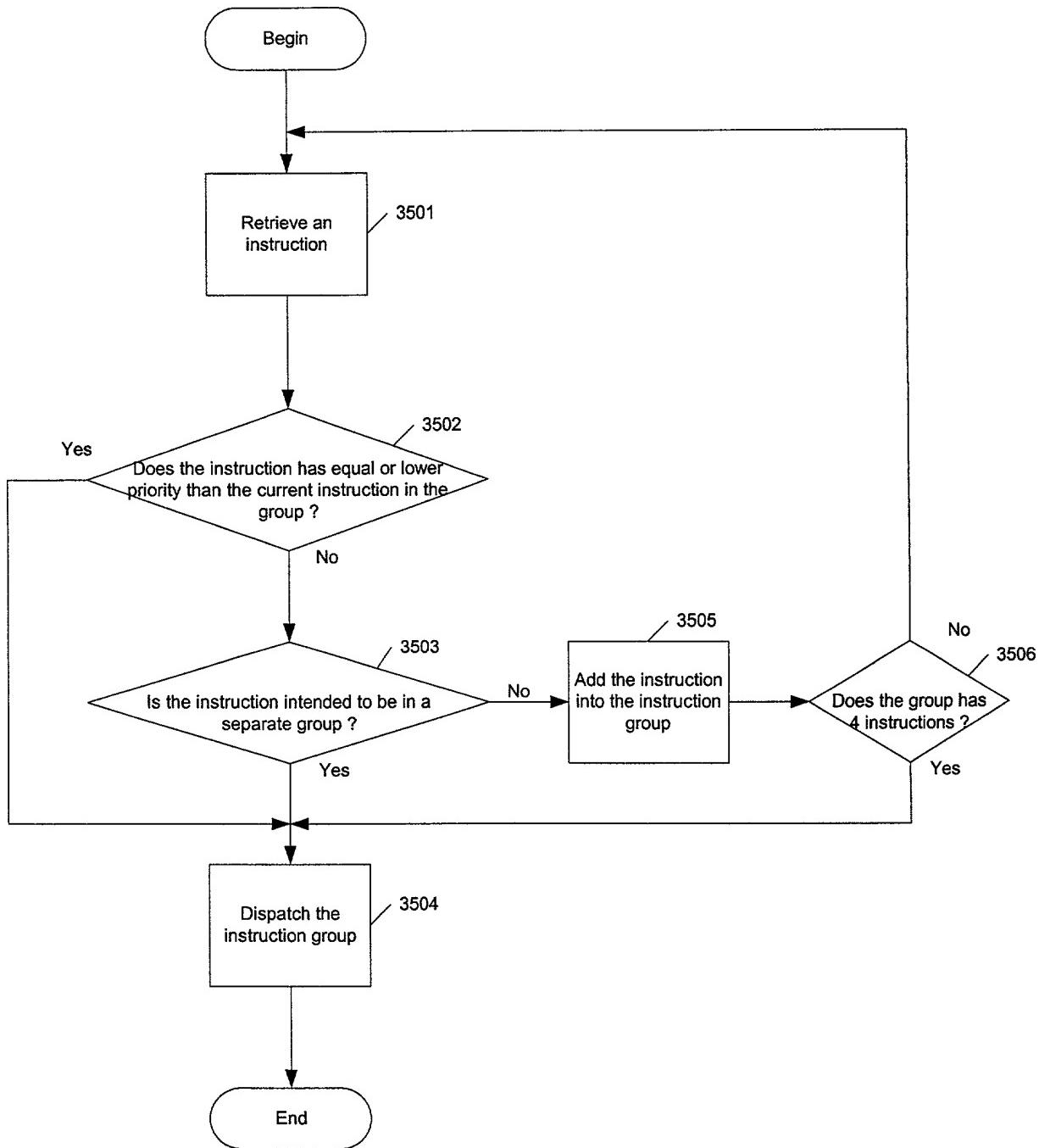


Figure 25

3600

Functional Unit	Latency	Dispatch Rate
IALU - not multiply or divide	2	1
IALU - multiply	19	19
IALU - divide	35	35
ISHU	2	1
LSU - non-DMA address update	2	1
LSU - non-DMA load data update	3	1
LSU - non-DMA store	1	1
LSU - DMA instructions	1	1
VPU	2	1
VSIU	2	1
VCIU	6	1
VLUT - reads, vvid	4	1
VLUT - writes	1	1
Branch instruction	1	1

Figure 26

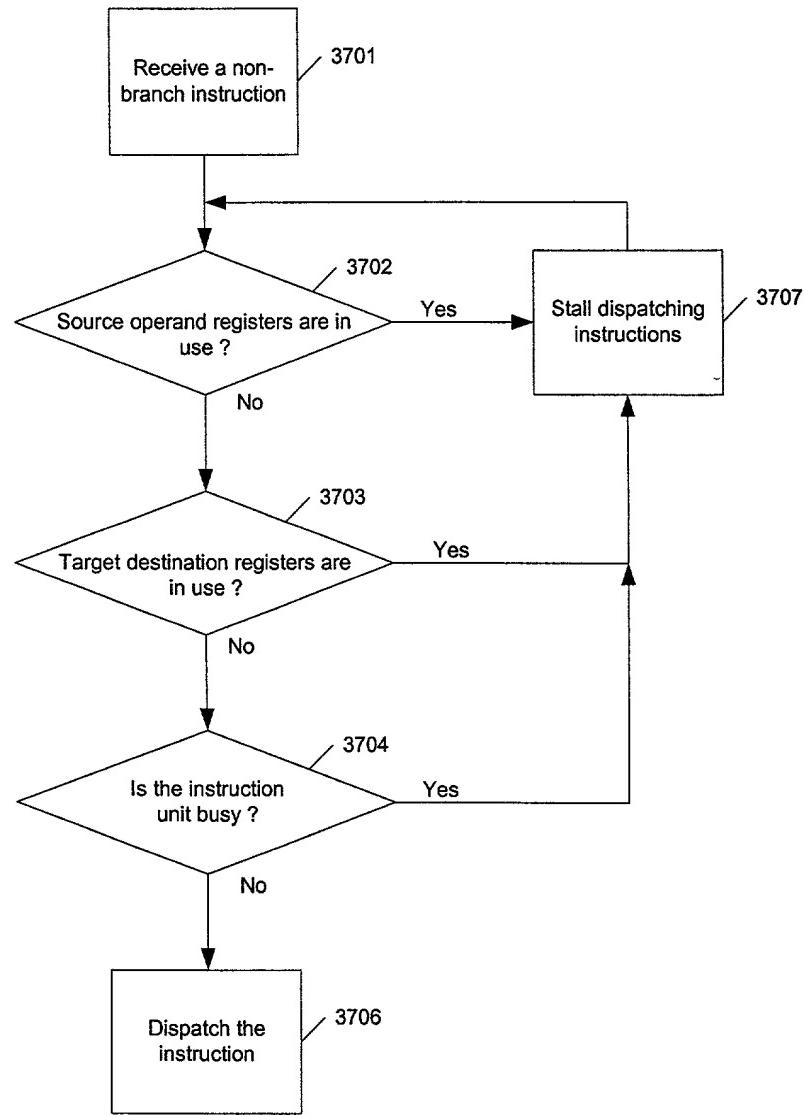


Figure 27

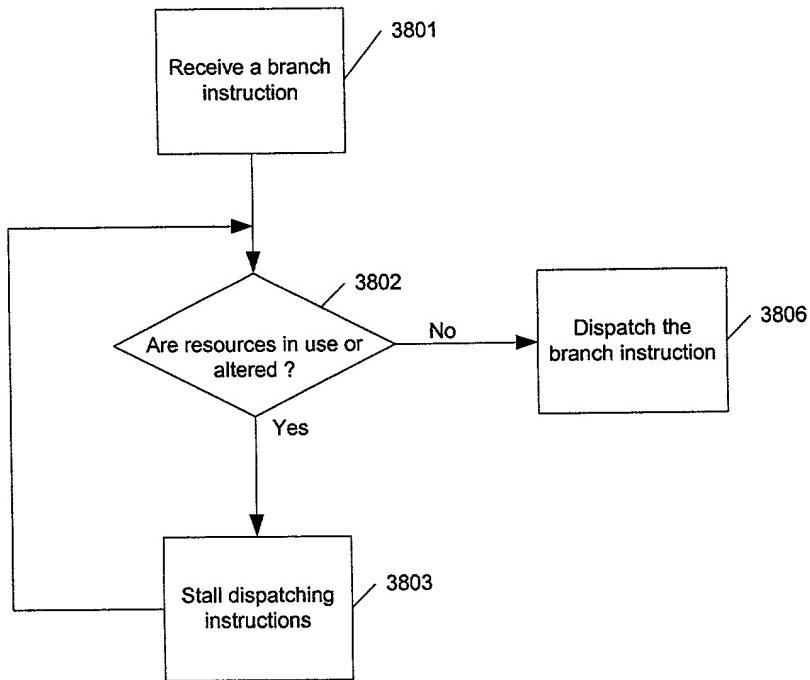


Figure 28

3900

Program Counter	PSt
0	29 30 31

3901

Pst	Name	Description
00	Idle	CQ counters are equal and no current command executing. Program counter is invalid.
01	Run	Command was executing. Program counter points to next instruction that would have been executed.
10	IWait	Command was executing, but instruction fetching has stopped due to a previous exception. Program counter points to the next instruction that would have been executed.
11	CWait	Command was not executing due to an exception in fetching the command. Program counter is invalid.

Figure 29

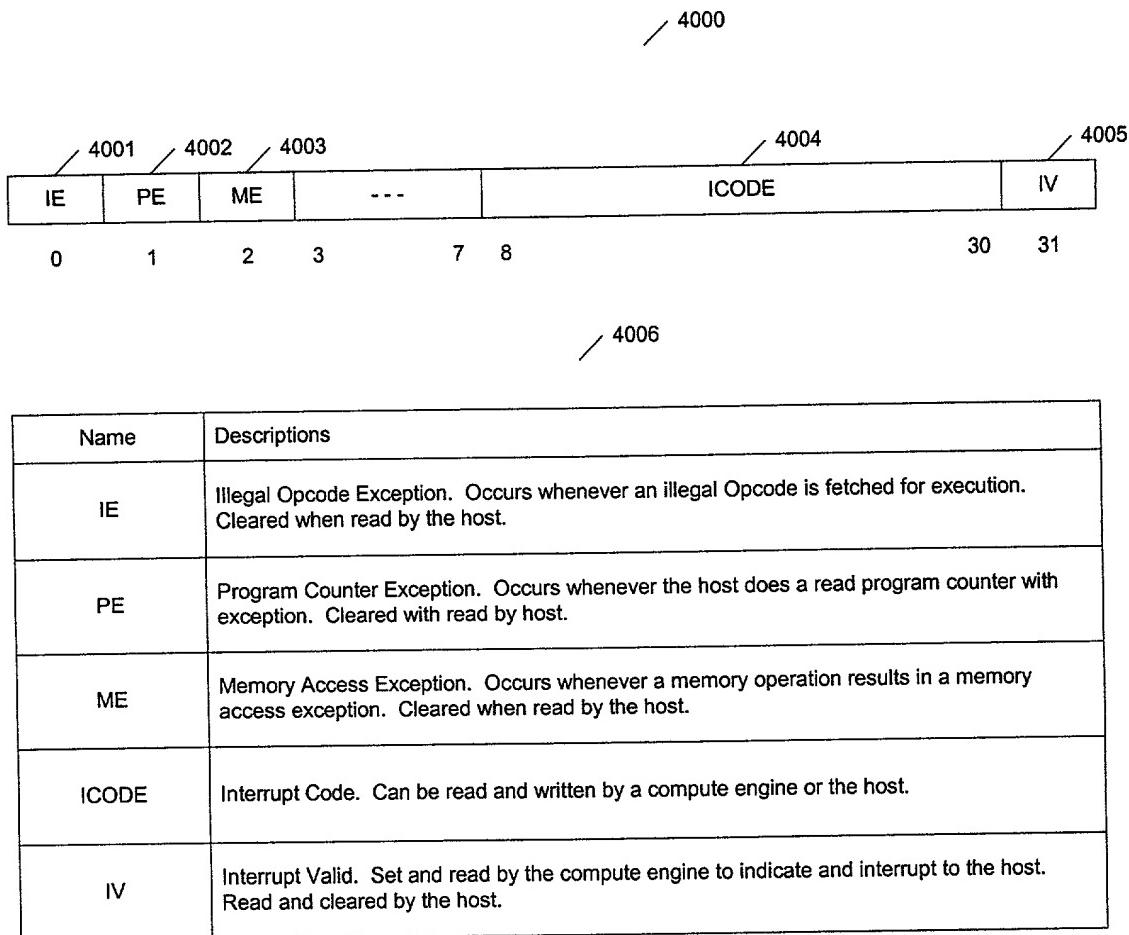


Figure 30

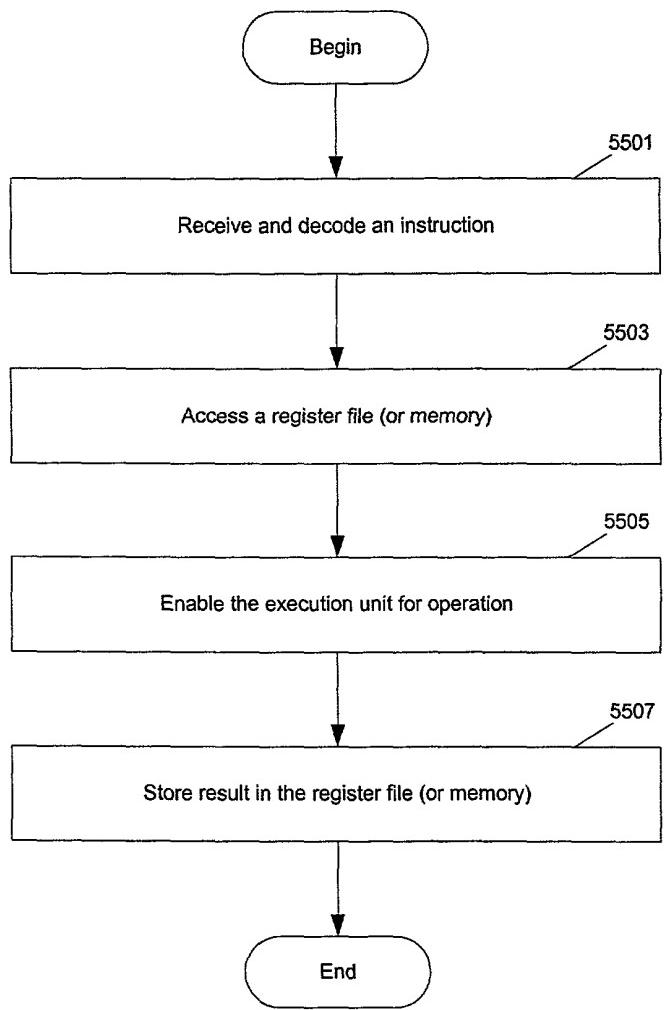


Fig. 31

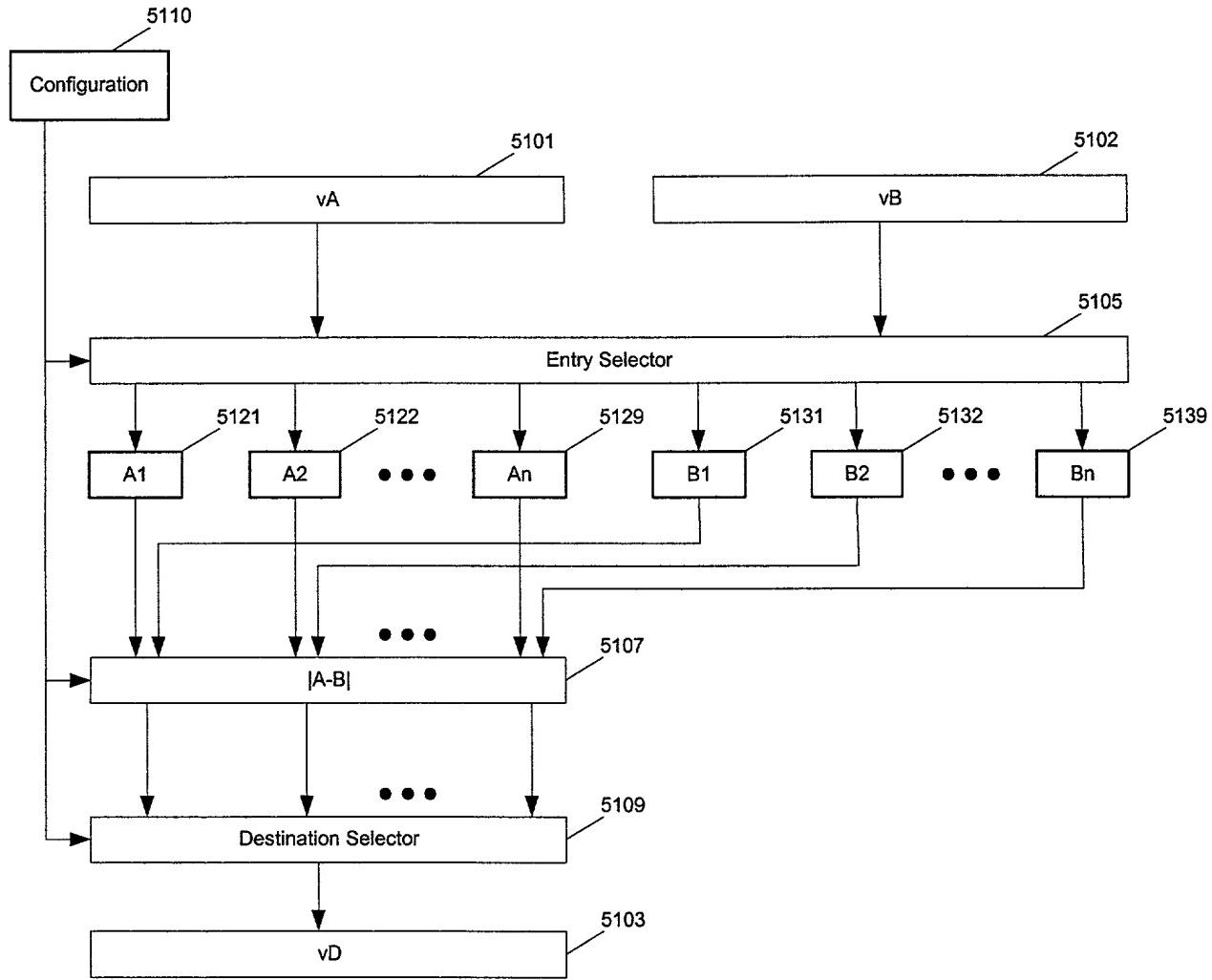


Fig. 32

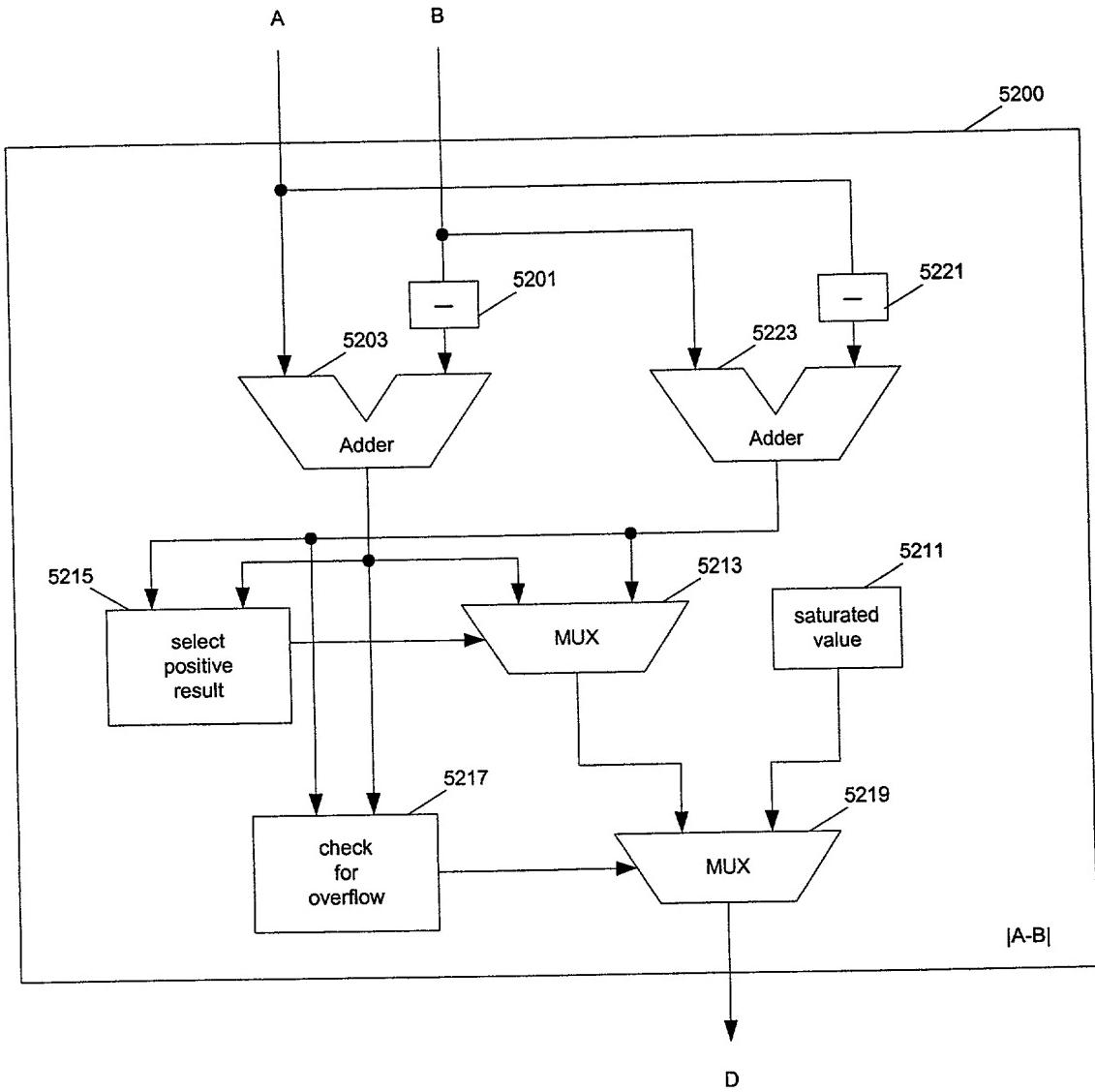


Fig. 33

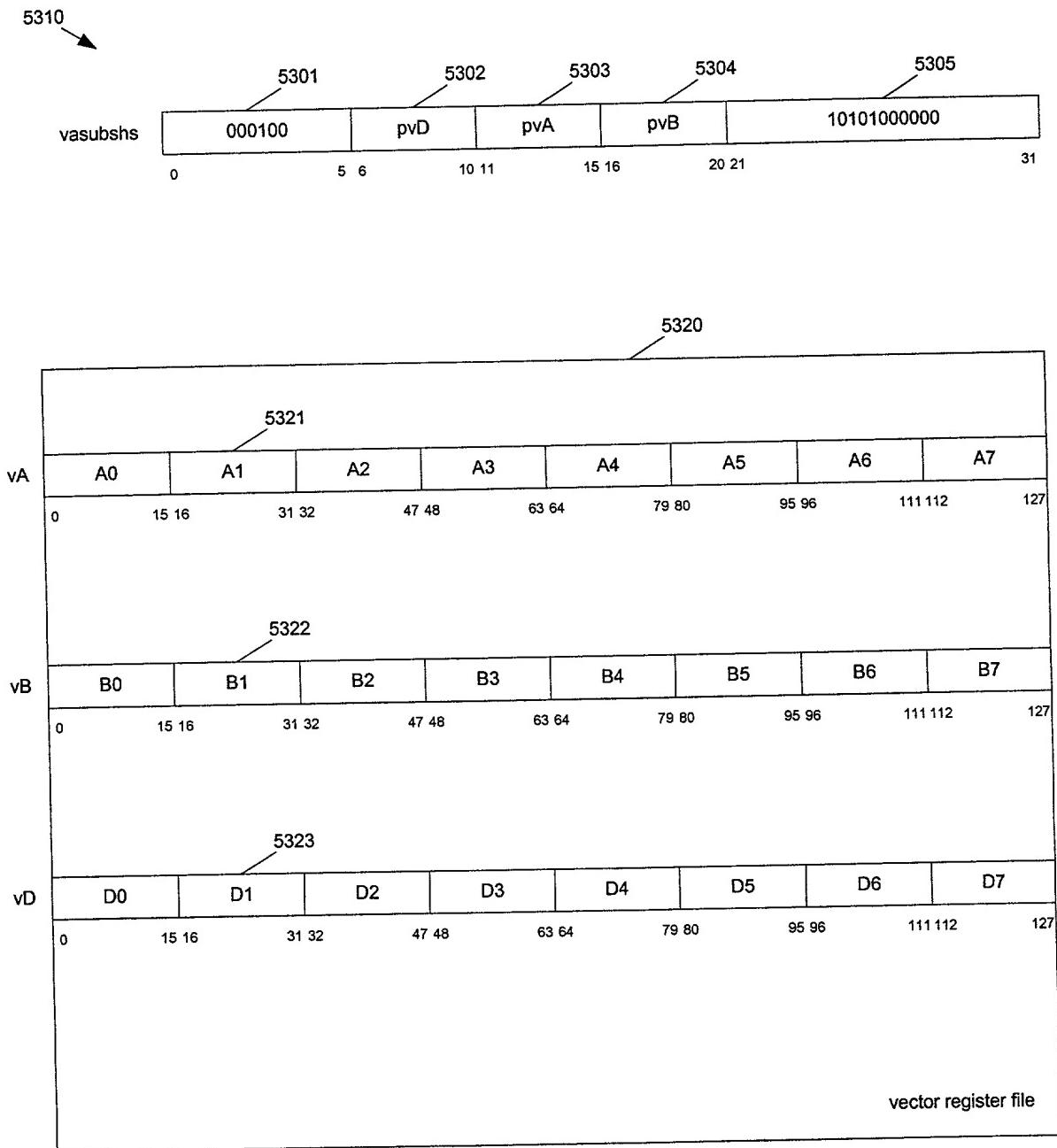


Fig. 34

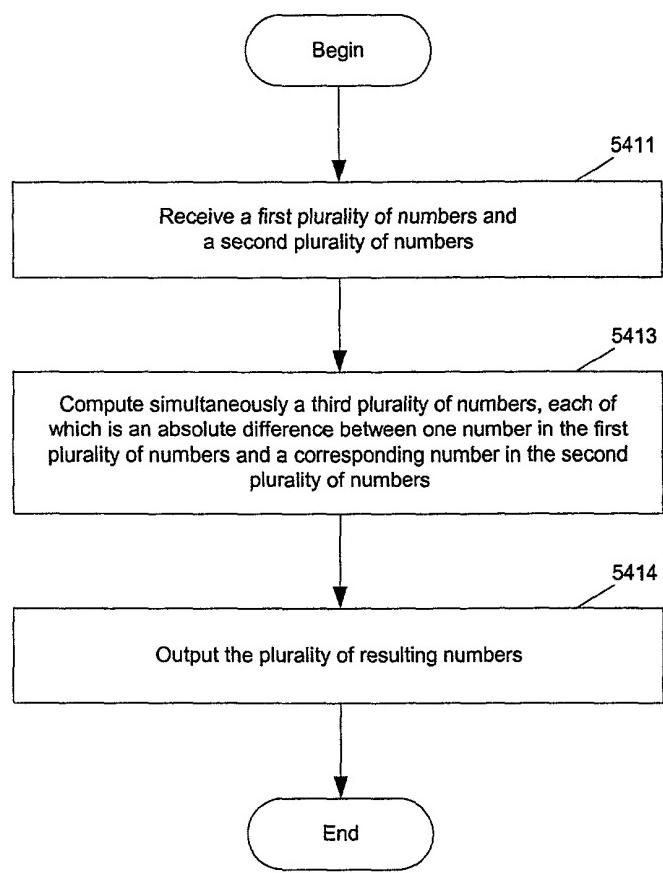


Fig. 35

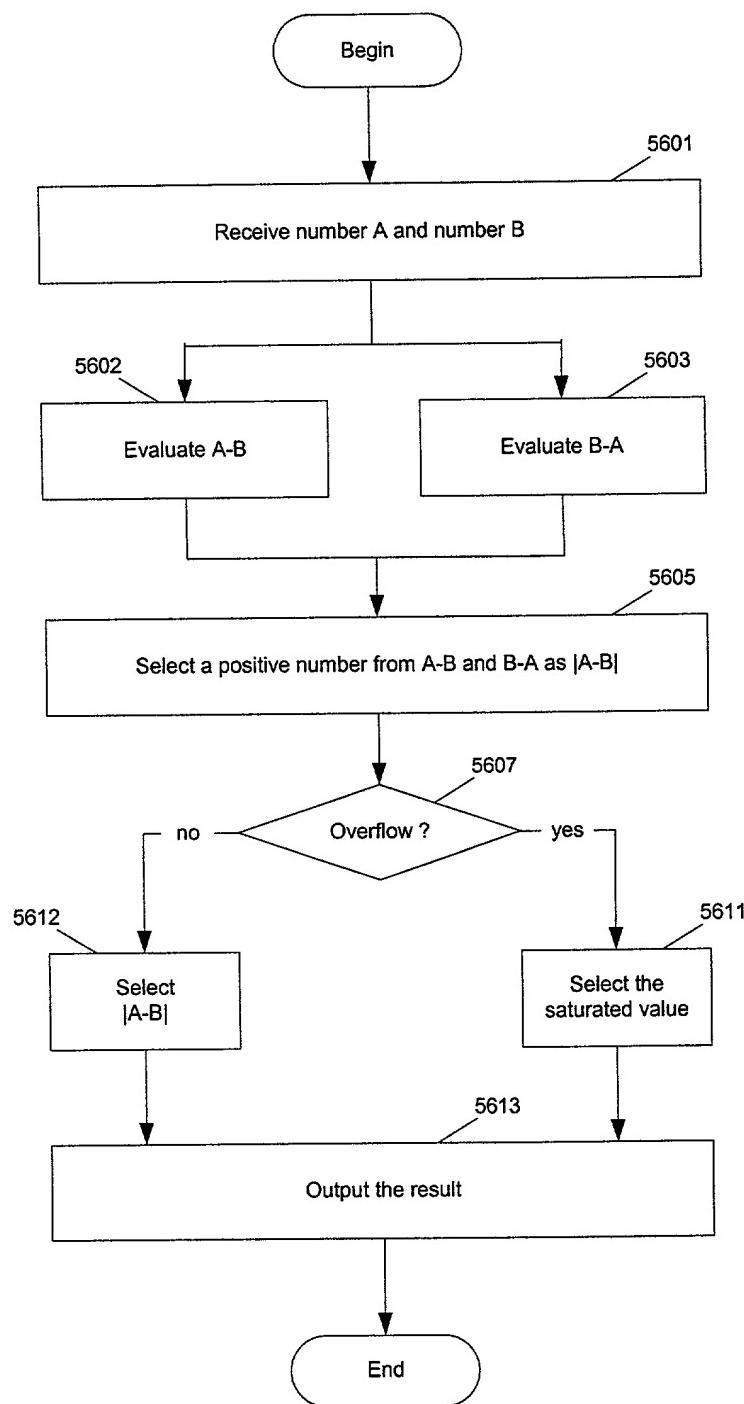


Fig. 36

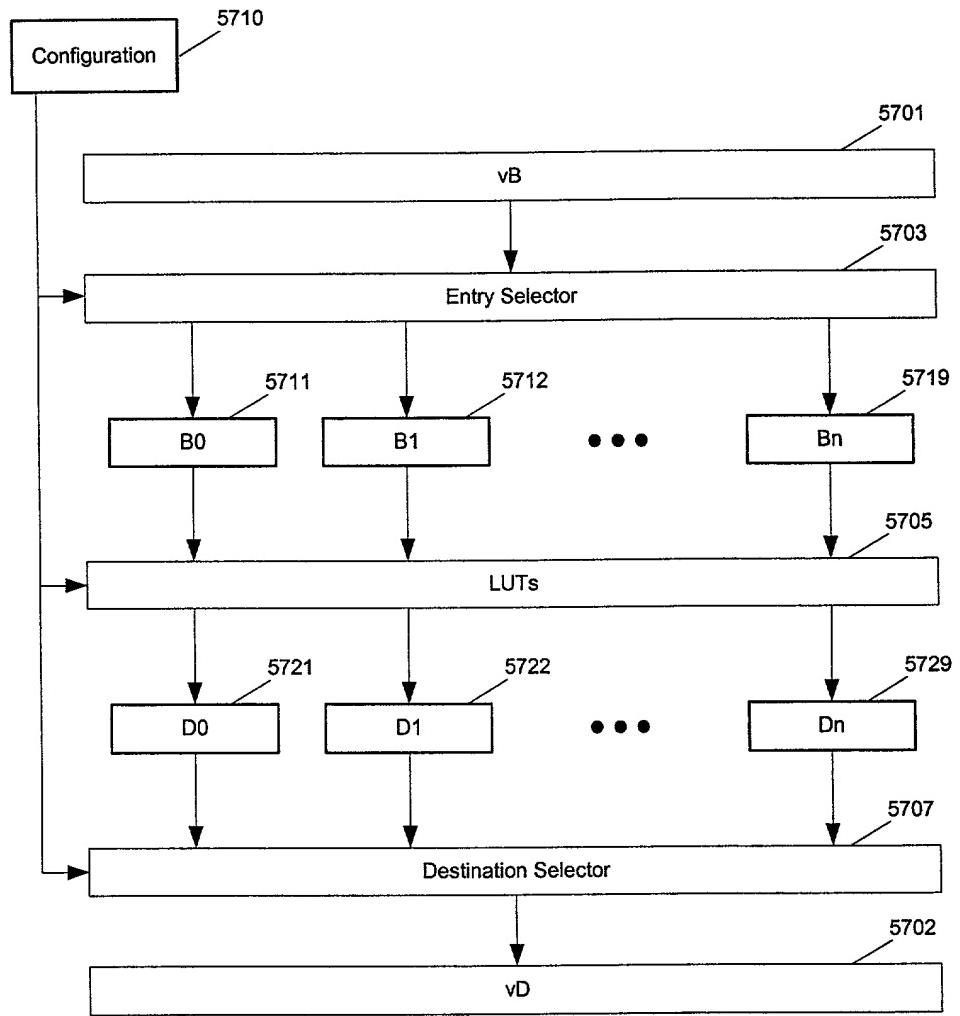


Fig. 37

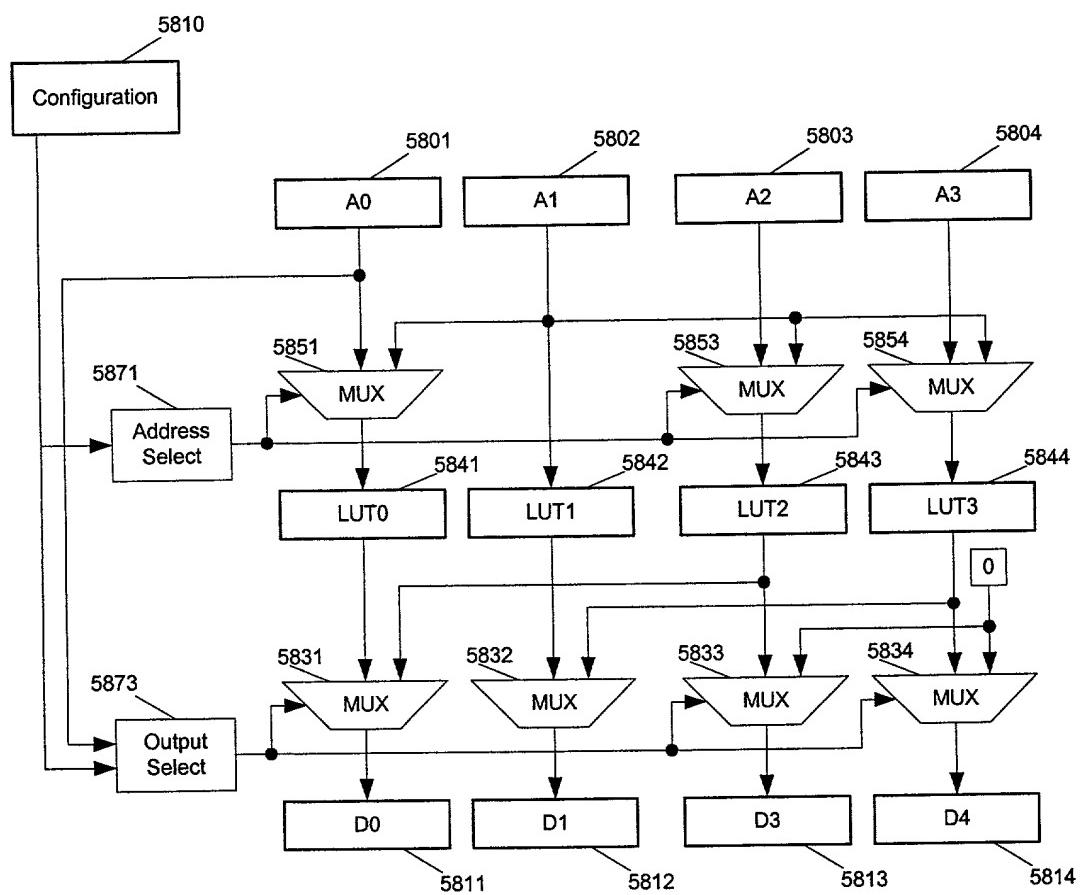


Fig. 38

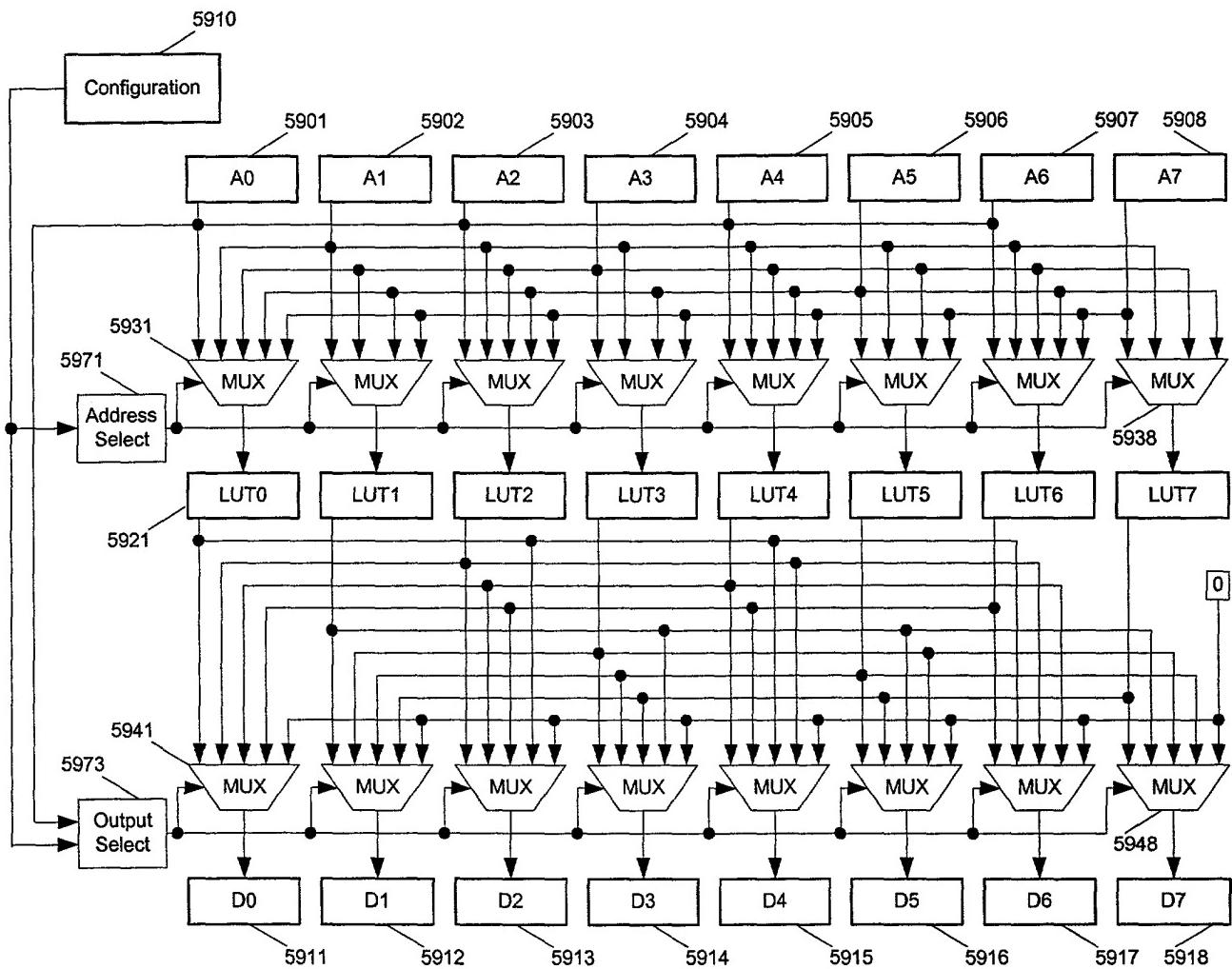


Fig. 39

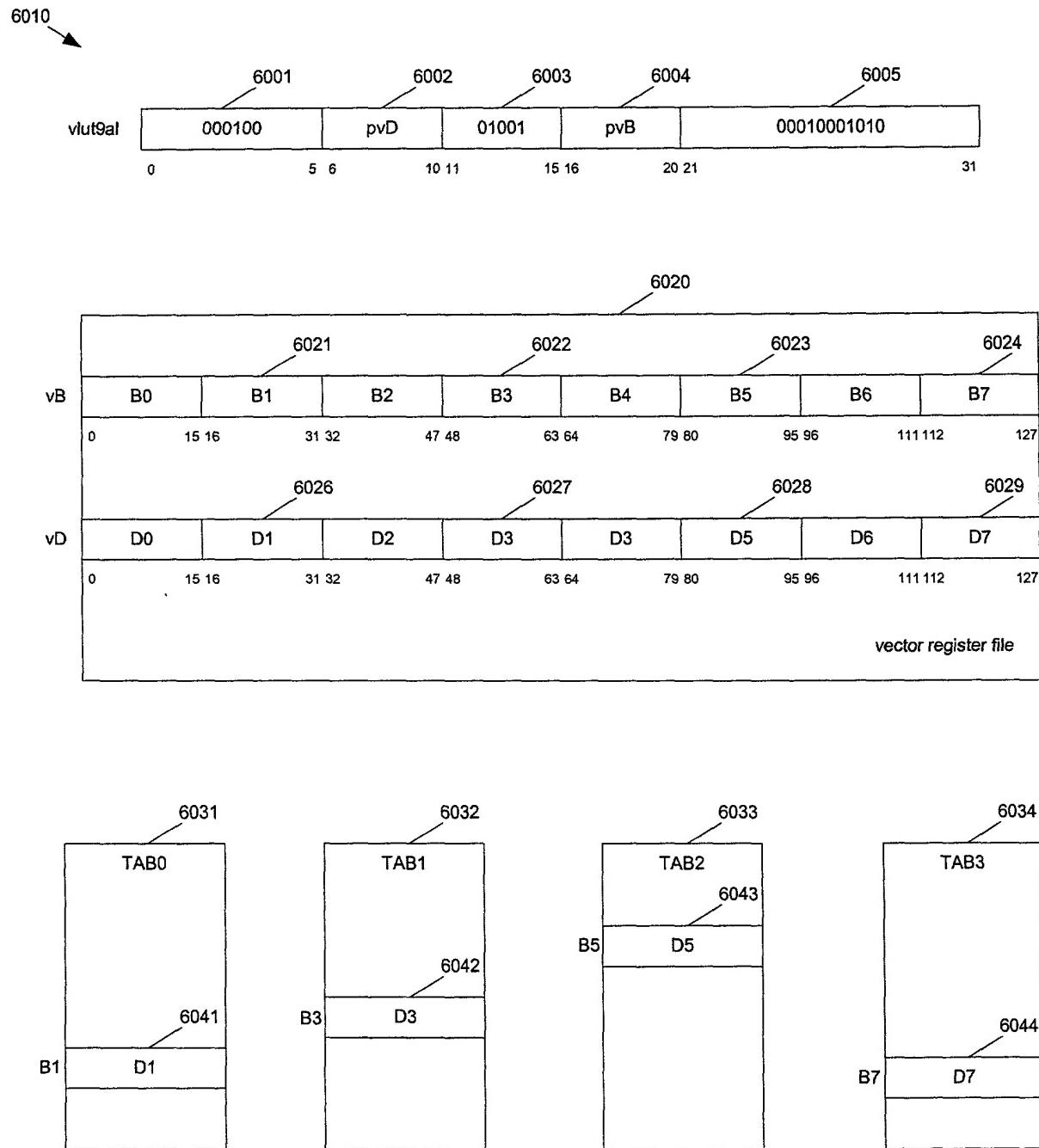


Fig. 40

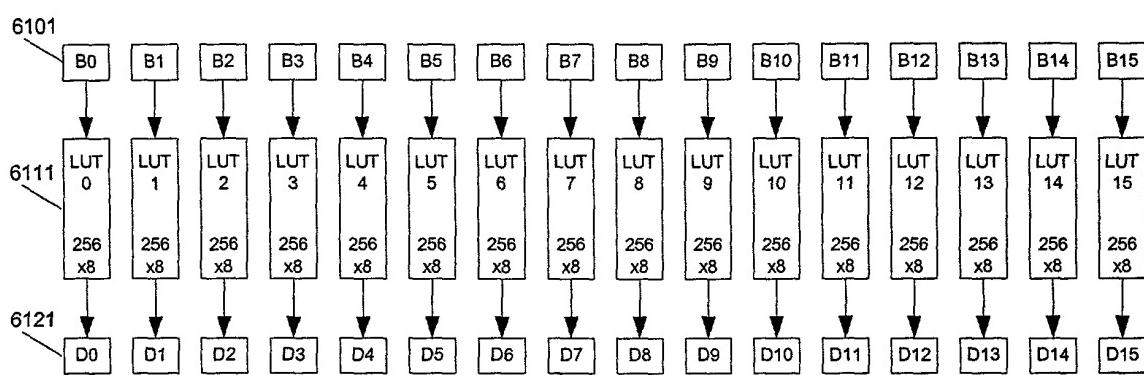


Fig. 41

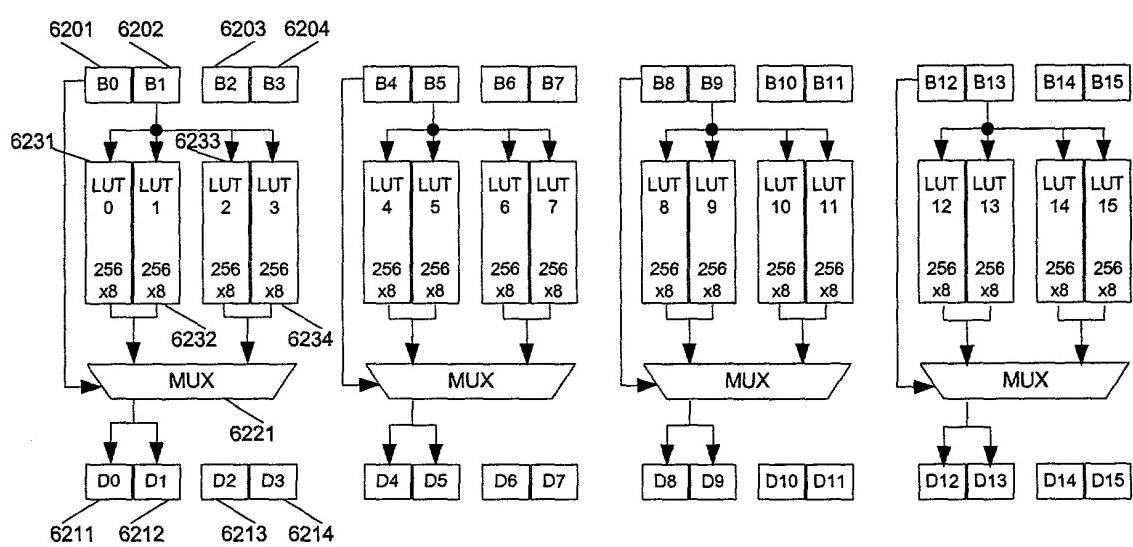


Fig. 42

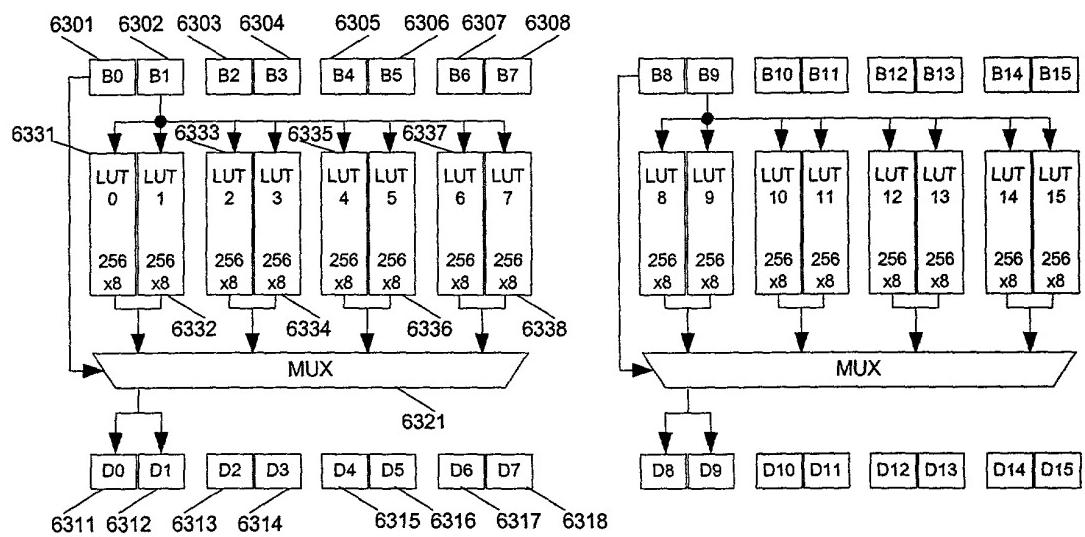


Fig. 43

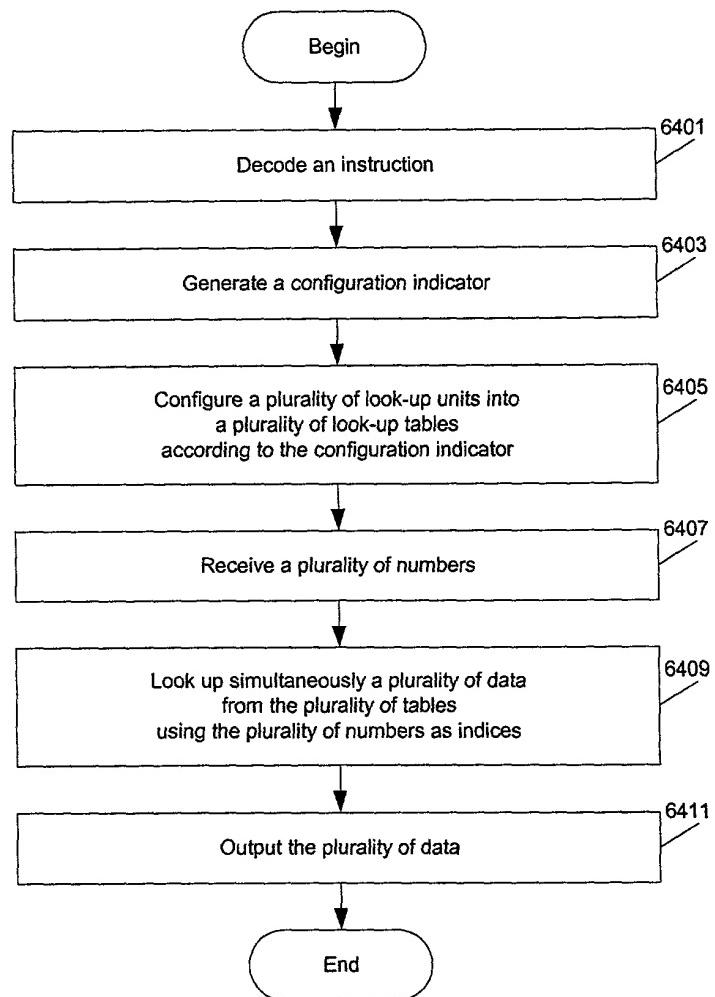


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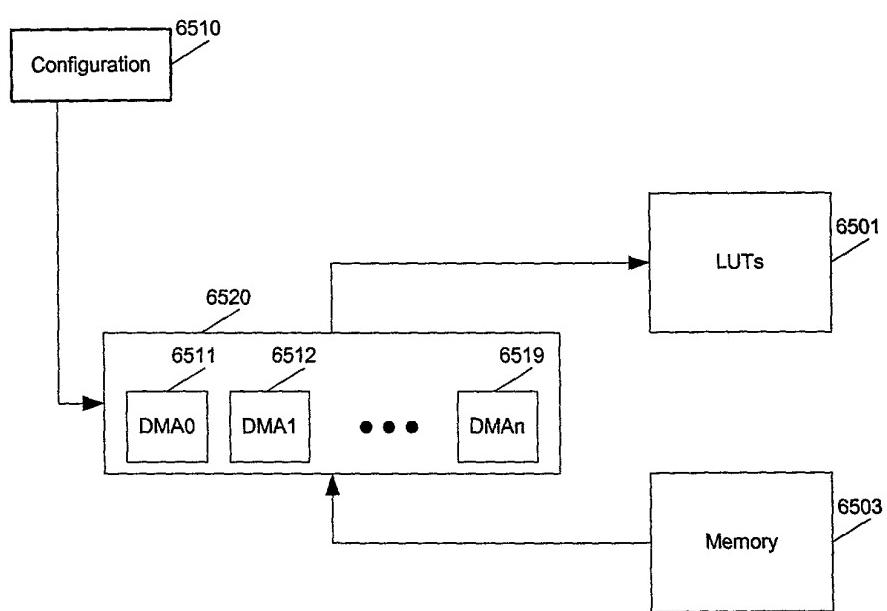
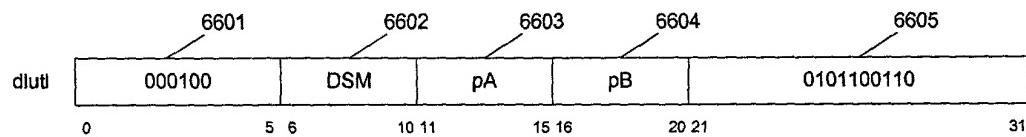


Fig. 45

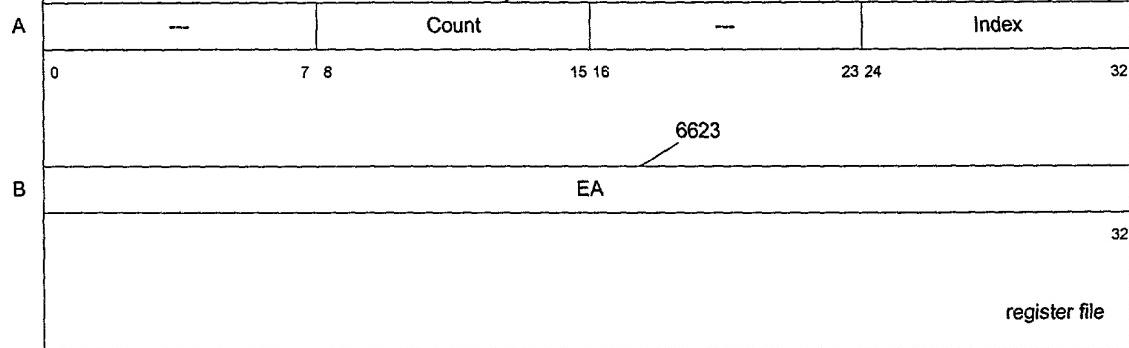
6610



6621

6620

6622



6631

6639

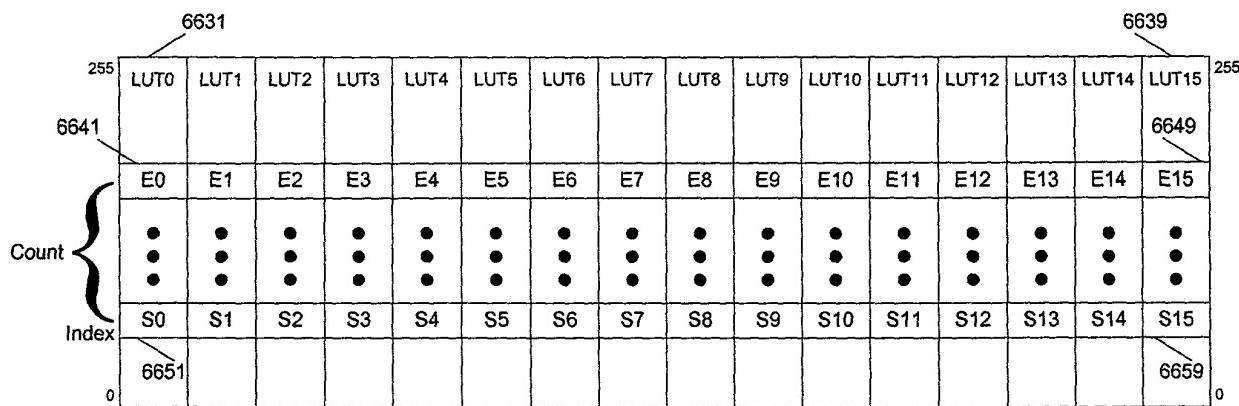


Fig. 46

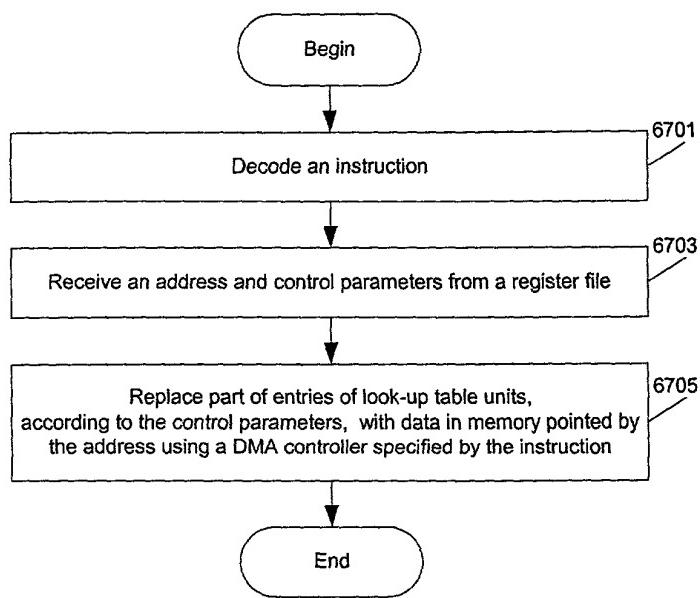


Fig. 47

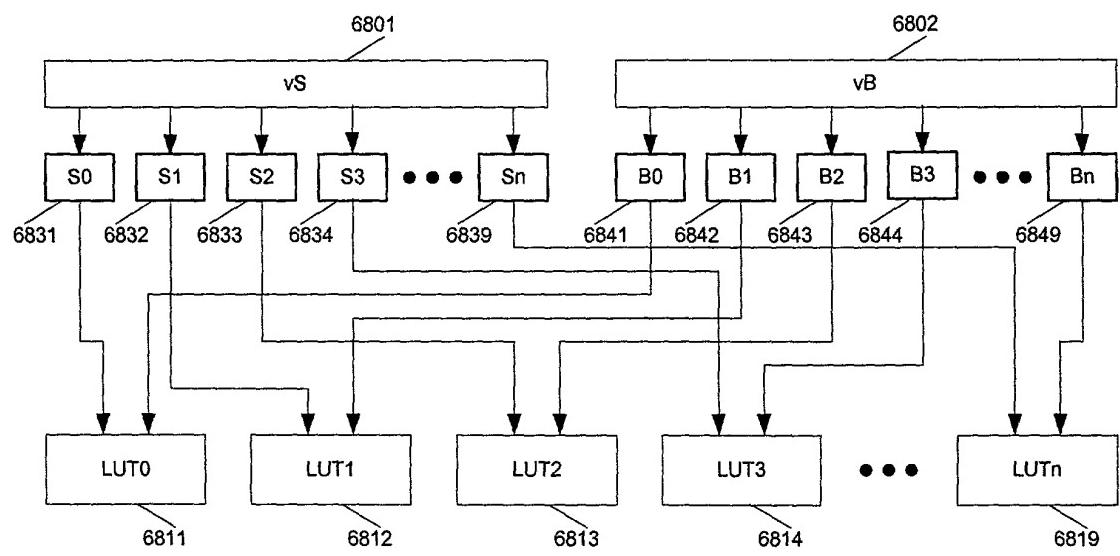


Fig. 48

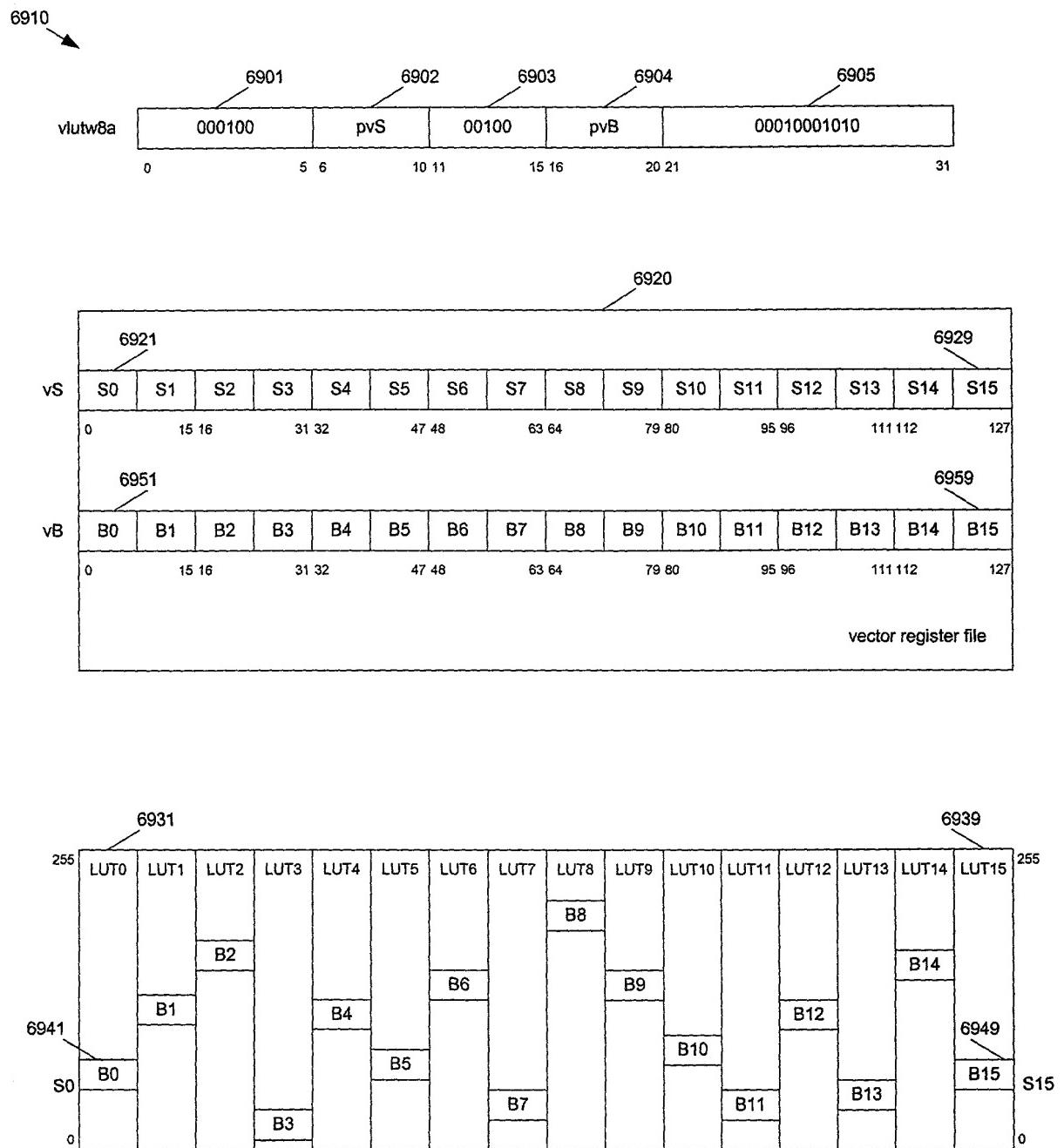


Fig. 49

7001
7002
7003
7004
7005
7006
7007
7008
7009
7010

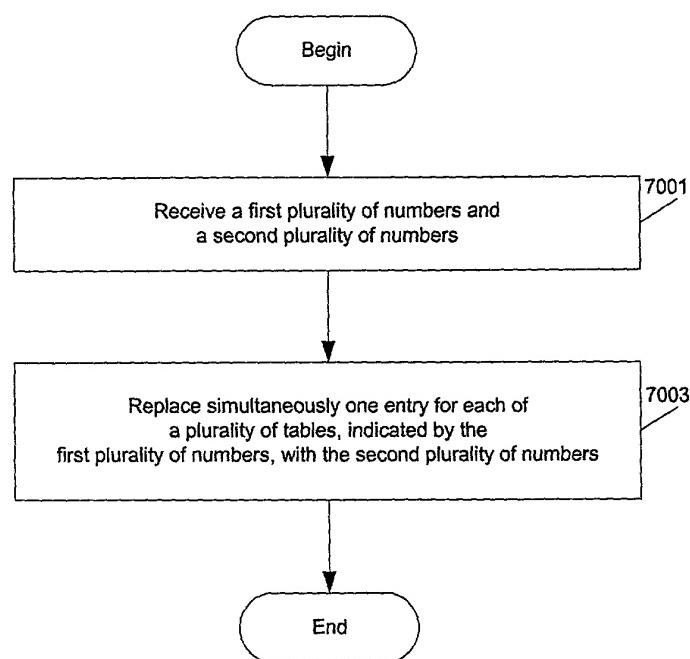


Fig. 50

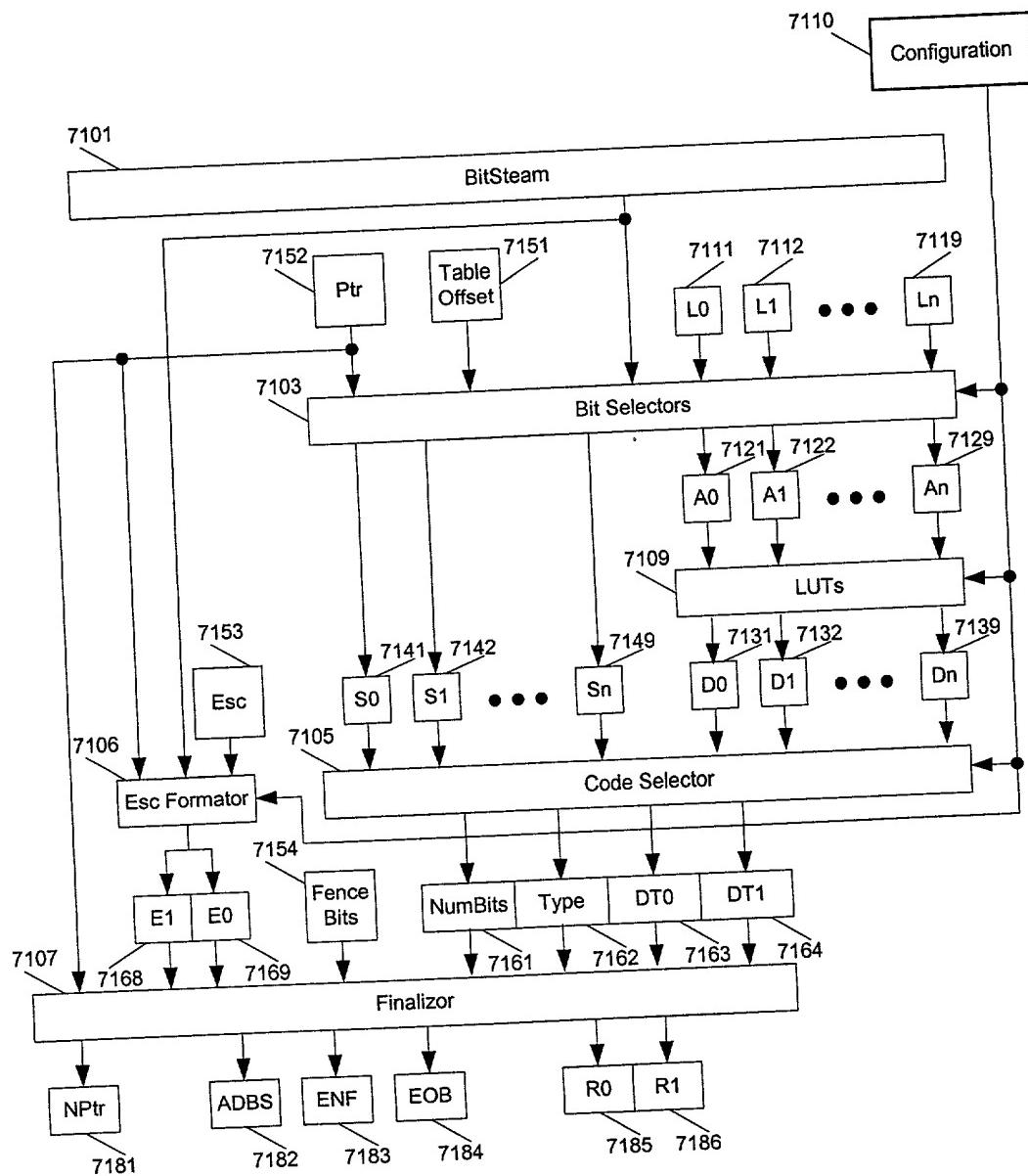


Fig. 51

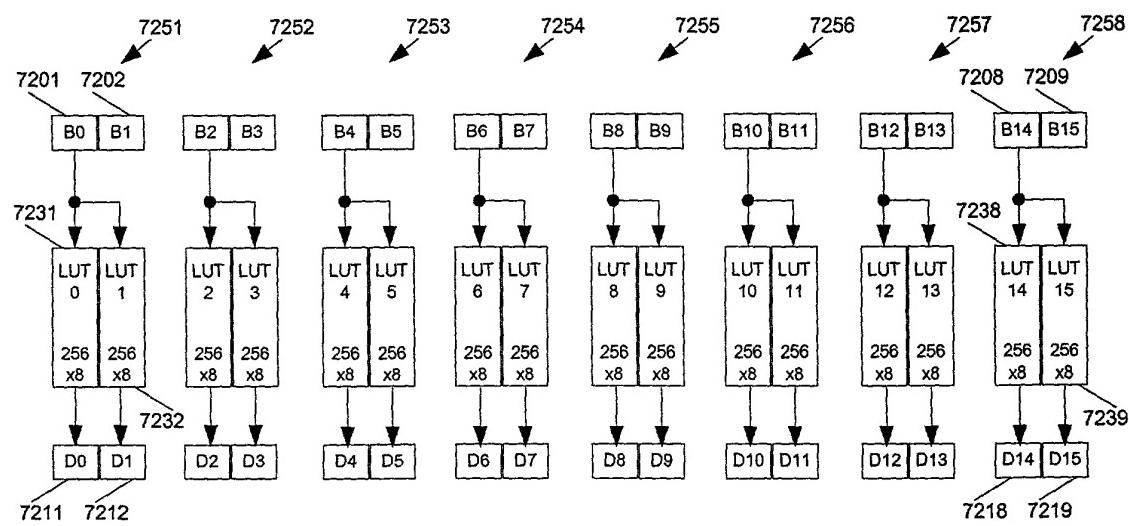


Fig. 52

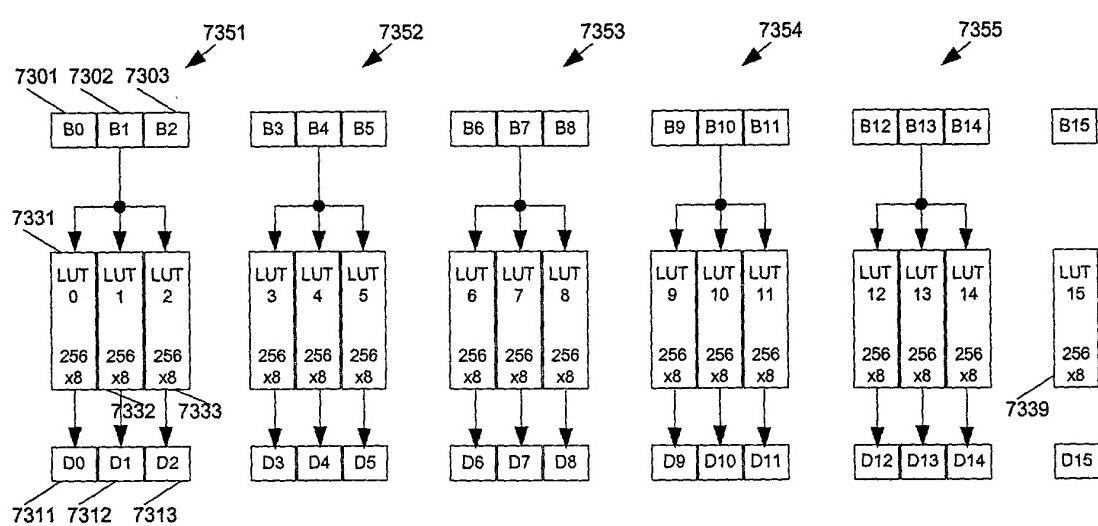


Fig. 53

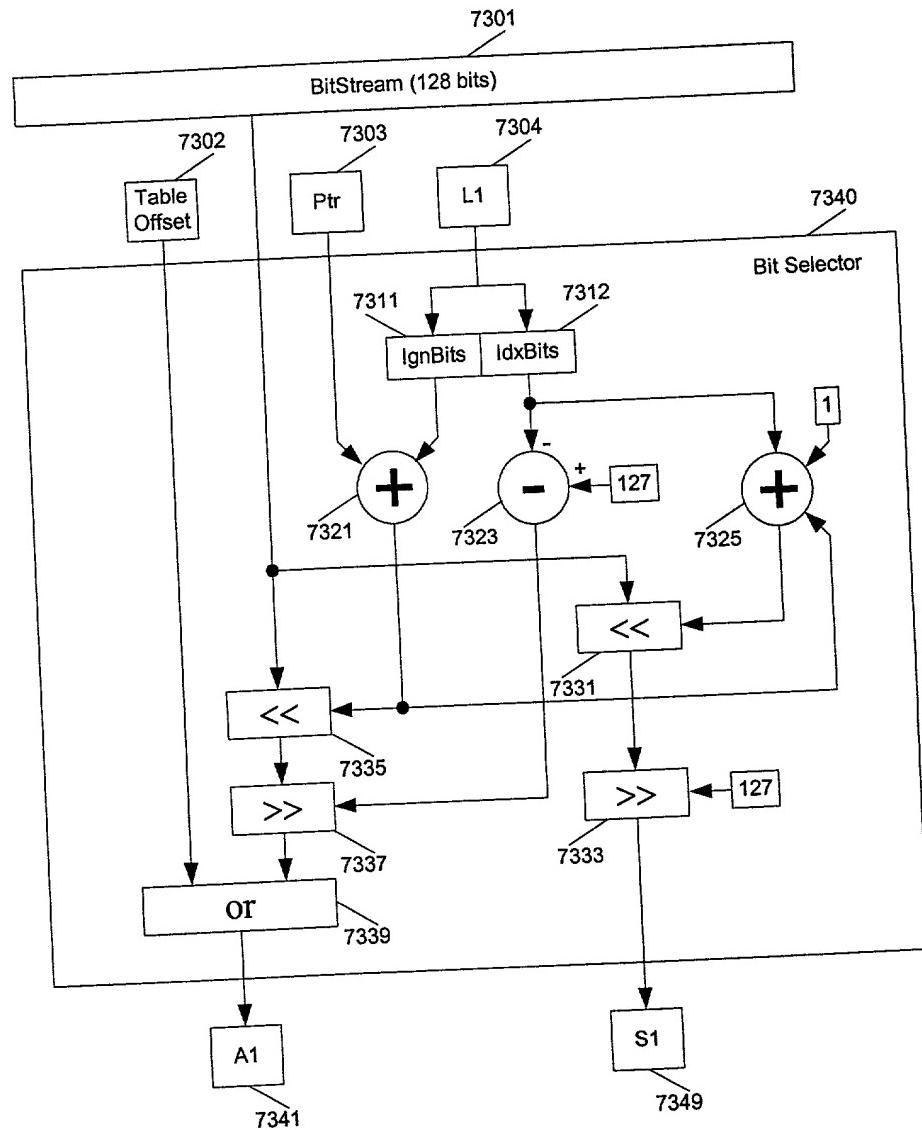


Fig. 54

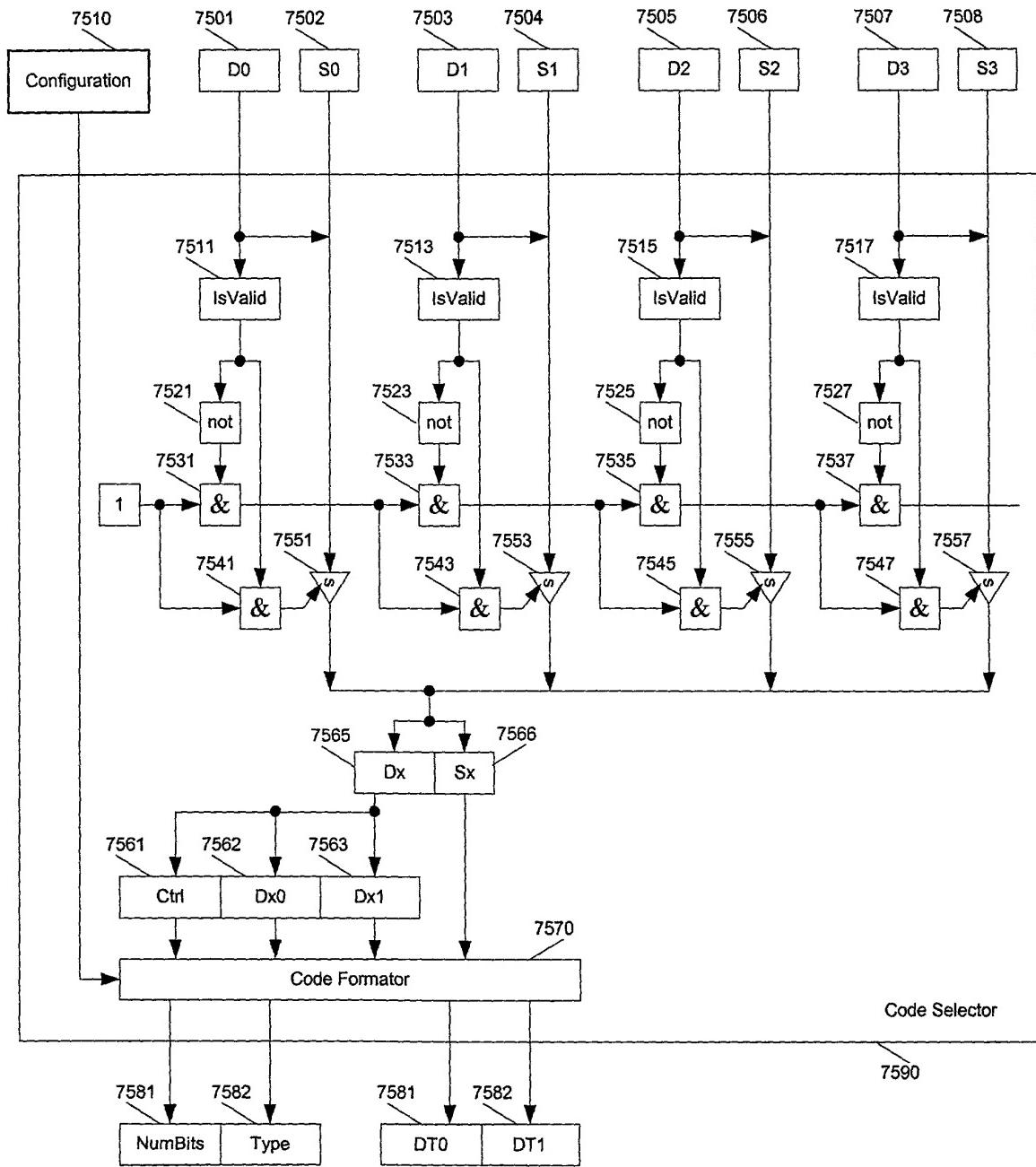


Fig. 55

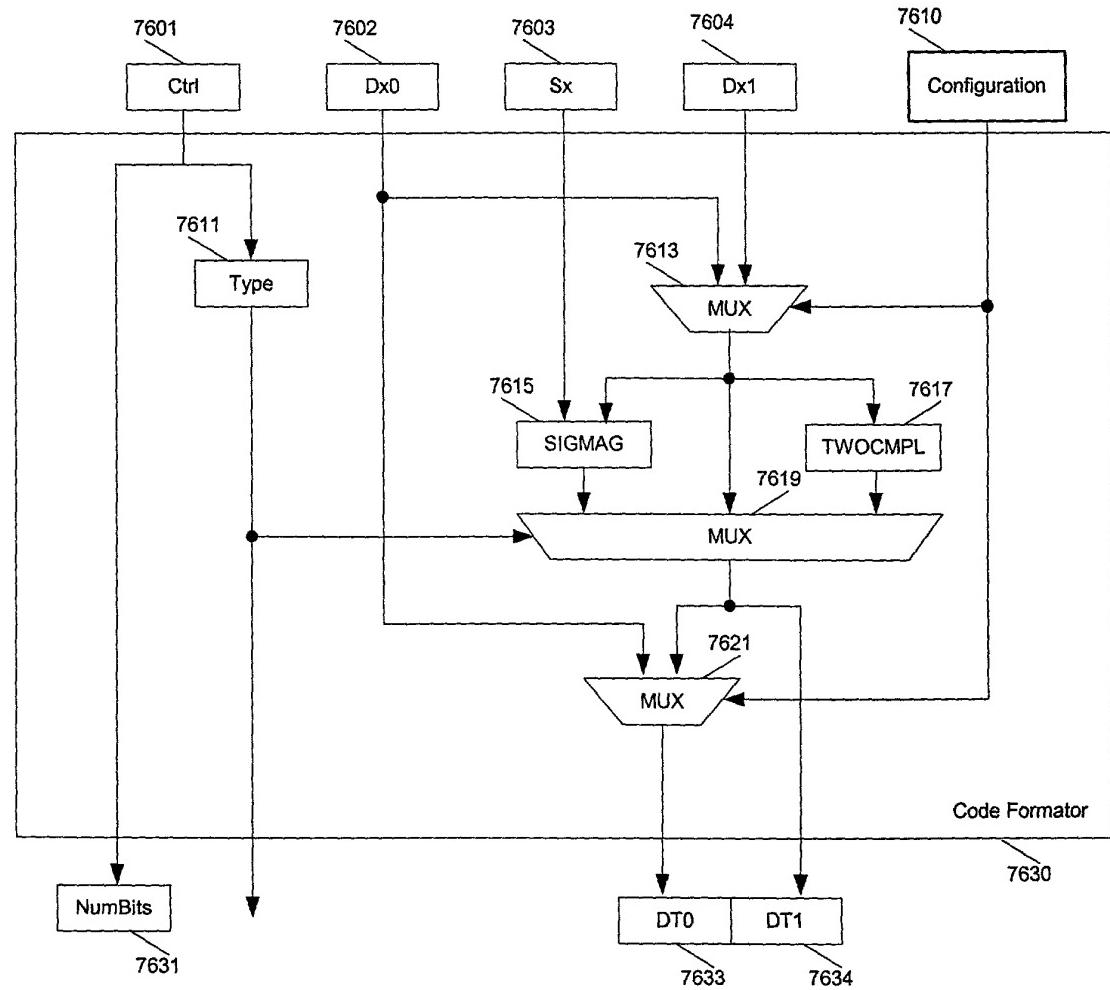


Fig. 56

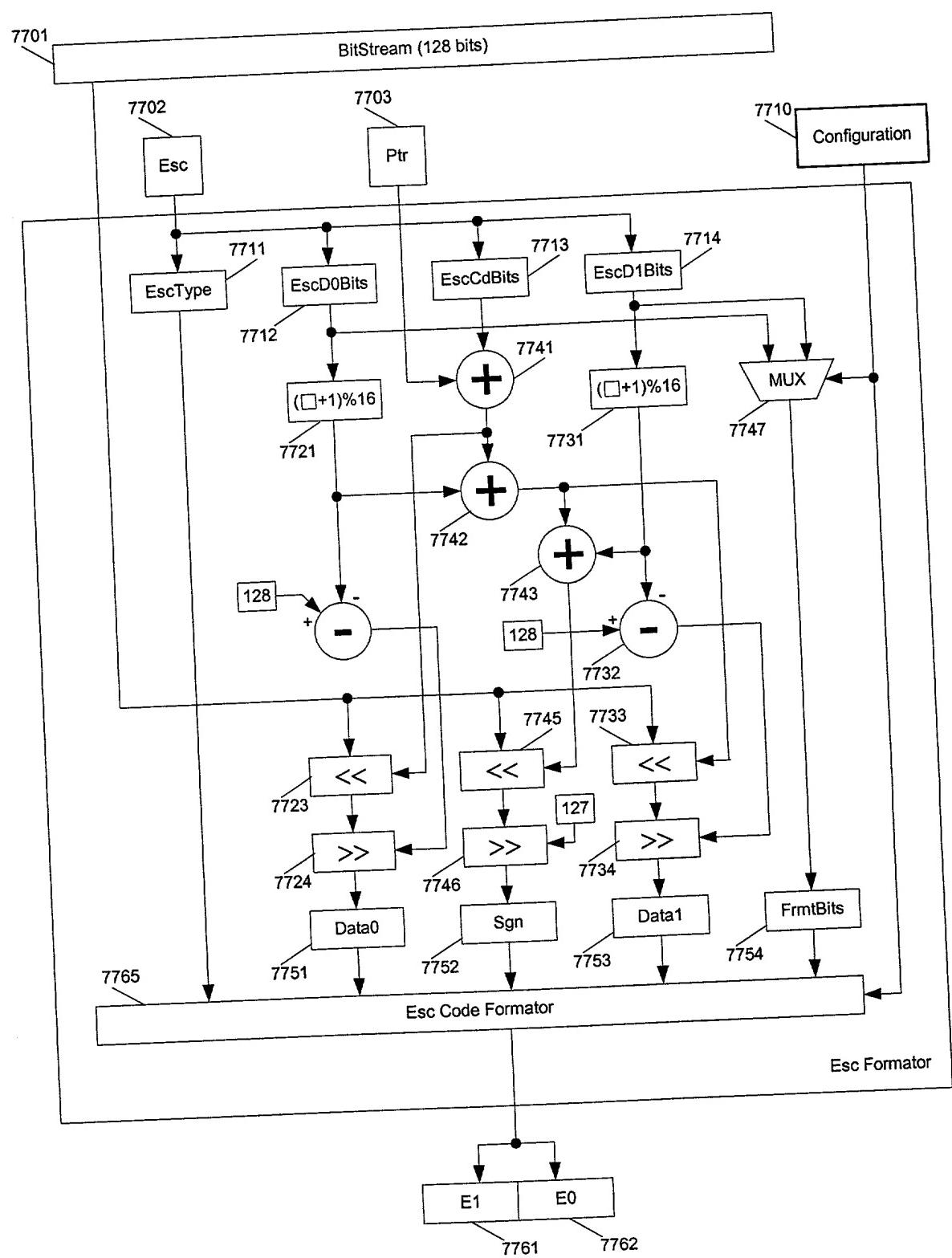


Fig. 57

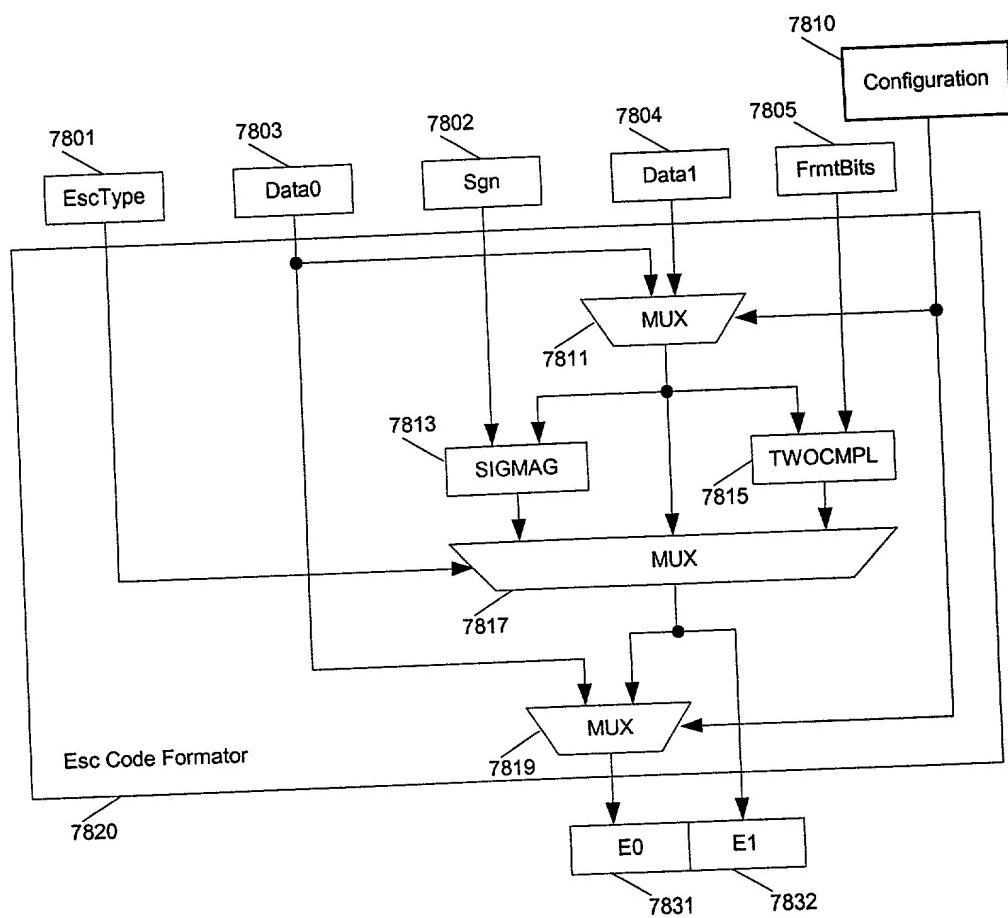


Fig. 58

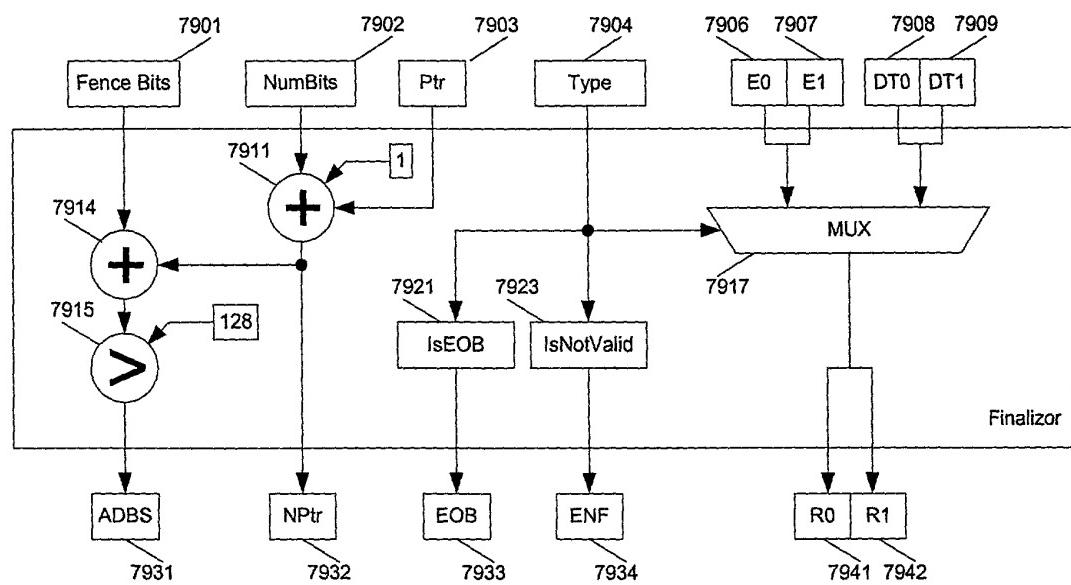


Fig. 59

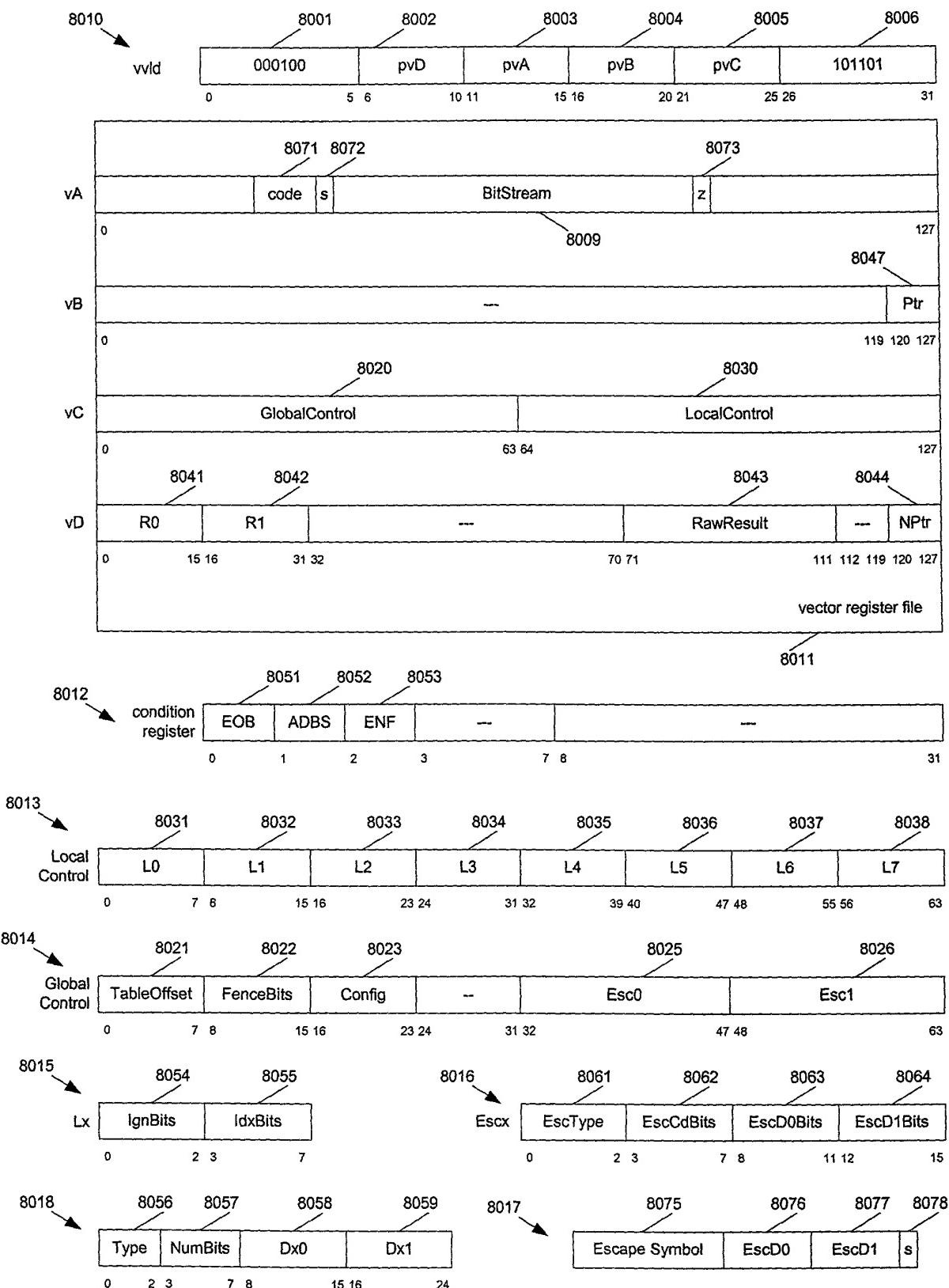


Fig. 60

1.0 0.9 0.8 0.7 0.6 0.5 0.4 0.3 0.2 0.1

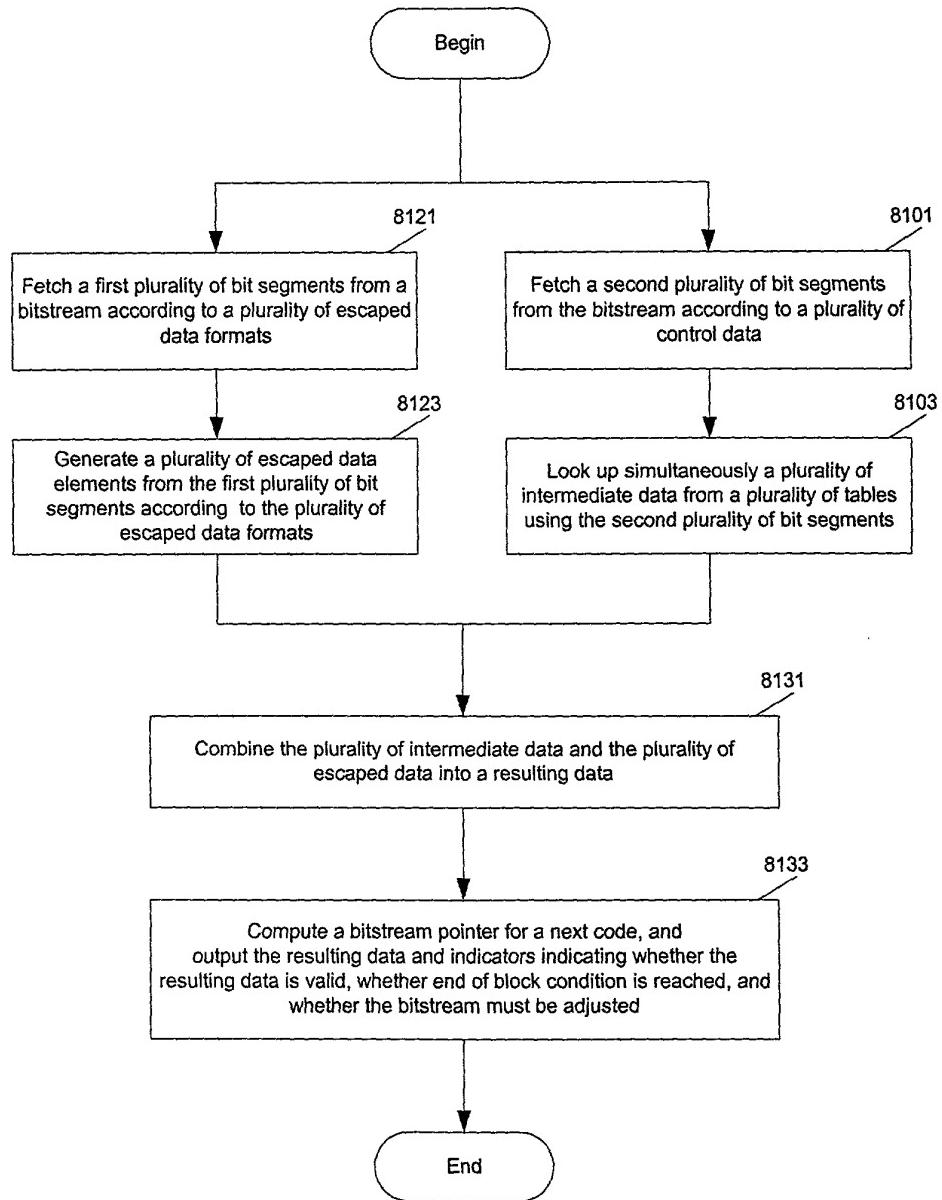


Fig. 61

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	type	bits	run	level												
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01	4	2	0	1	4	6	3	1	4	9	11	-1	4	10	5	3
02	4	2	0	1	4	6	3	-1	4	9	12	1	4	10	5	-3
03	4	2	0	1	4	6	3	-1	4	9	12	-1	4	10	5	-3
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2d	4	5	0	-5	5	8	0	15	0	0	0	0	4	11	3	0
2e	4	5	0	6	5	8	0	16	0	0	0	0	4	11	4	0
2f	4	5	0	-6	5	8	0	17	0	0	0	0	4	11	5	0
30	0	0	0	0	0	0	0	0	0	0	0	0	5	12	7	2
31	0	0	0	0	0	0	0	0	0	0	0	0	5	12	8	2
32	0	0	0	0	0	0	0	0	0	0	0	0	5	12	9	2
33	0	0	0	0	0	0	0	0	0	0	0	0	5	12	10	2
34	0	0	0	0	0	0	0	0	0	0	0	0	5	12	7	3
35	0	0	0	0	0	0	0	0	0	0	0	0	5	12	8	3
36	0	0	0	0	0	0	0	0	0	0	0	0	5	12	4	5
37	0	0	0	0	0	0	0	0	0	0	0	0	5	12	3	7
38	0	0	0	0	0	0	0	0	0	0	0	0	5	12	2	7
39	0	0	0	0	0	0	0	0	0	0	0	0	5	12	2	8
3a	0	0	0	0	0	0	0	0	0	0	0	0	5	12	2	9
3b	0	0	0	0	0	0	0	0	0	0	0	0	5	12	2	10
3c	0	0	0	0	2	12	0	0	0	0	0	0	5	12	2	11
3d	0	0	0	0	2	12	0	0	0	0	0	0	5	12	1	15
3e	0	0	0	0	3	15	0	0	0	0	0	0	5	12	1	16
3f	0	0	0	0	3	15	0	0	0	0	0	0	5	12	1	17
40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
...	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ff	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Fig. 62

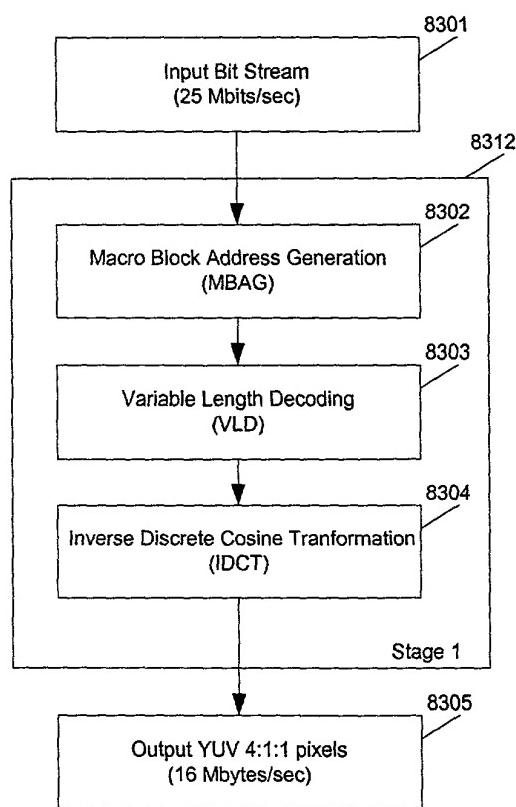


Fig. 63

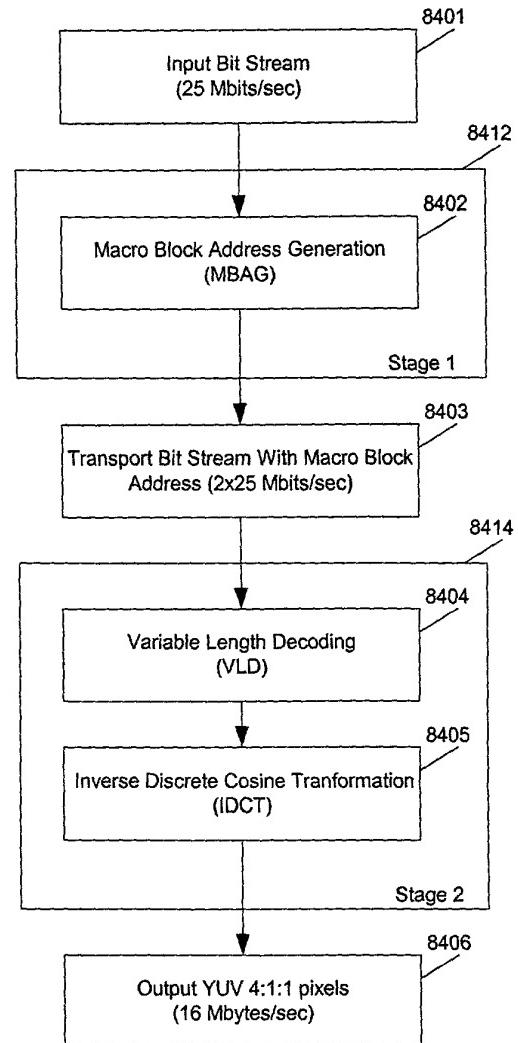


Fig. 64

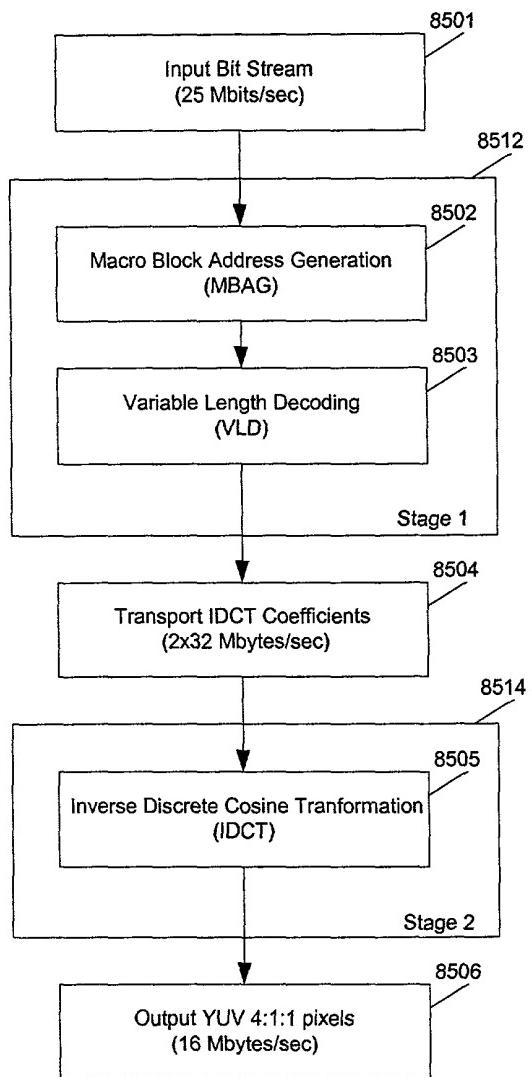


Fig. 65

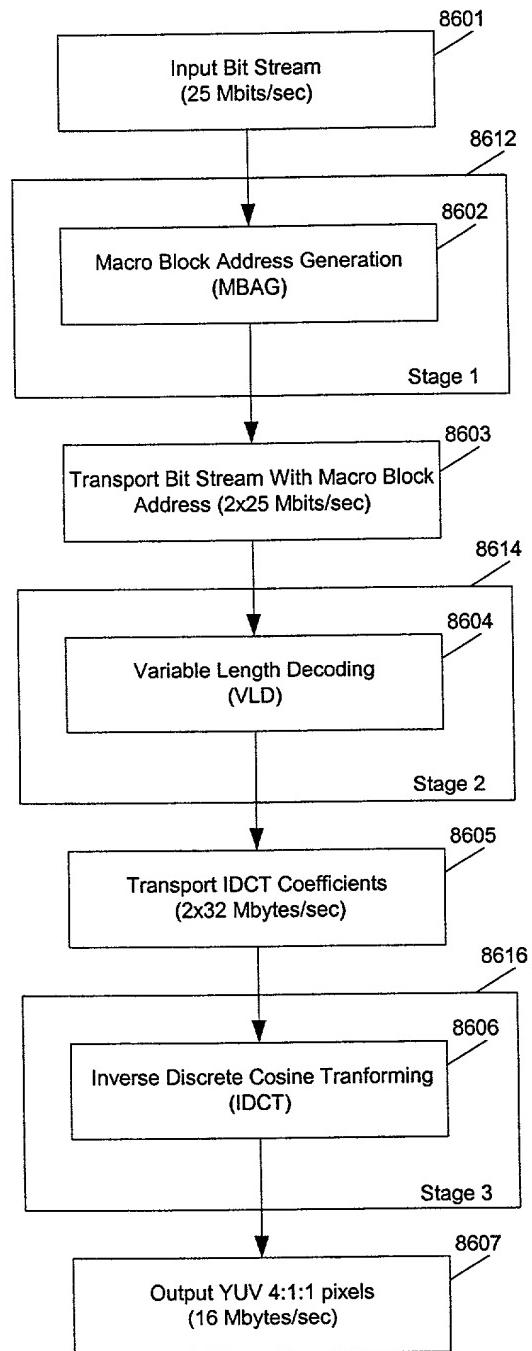


Fig. 66

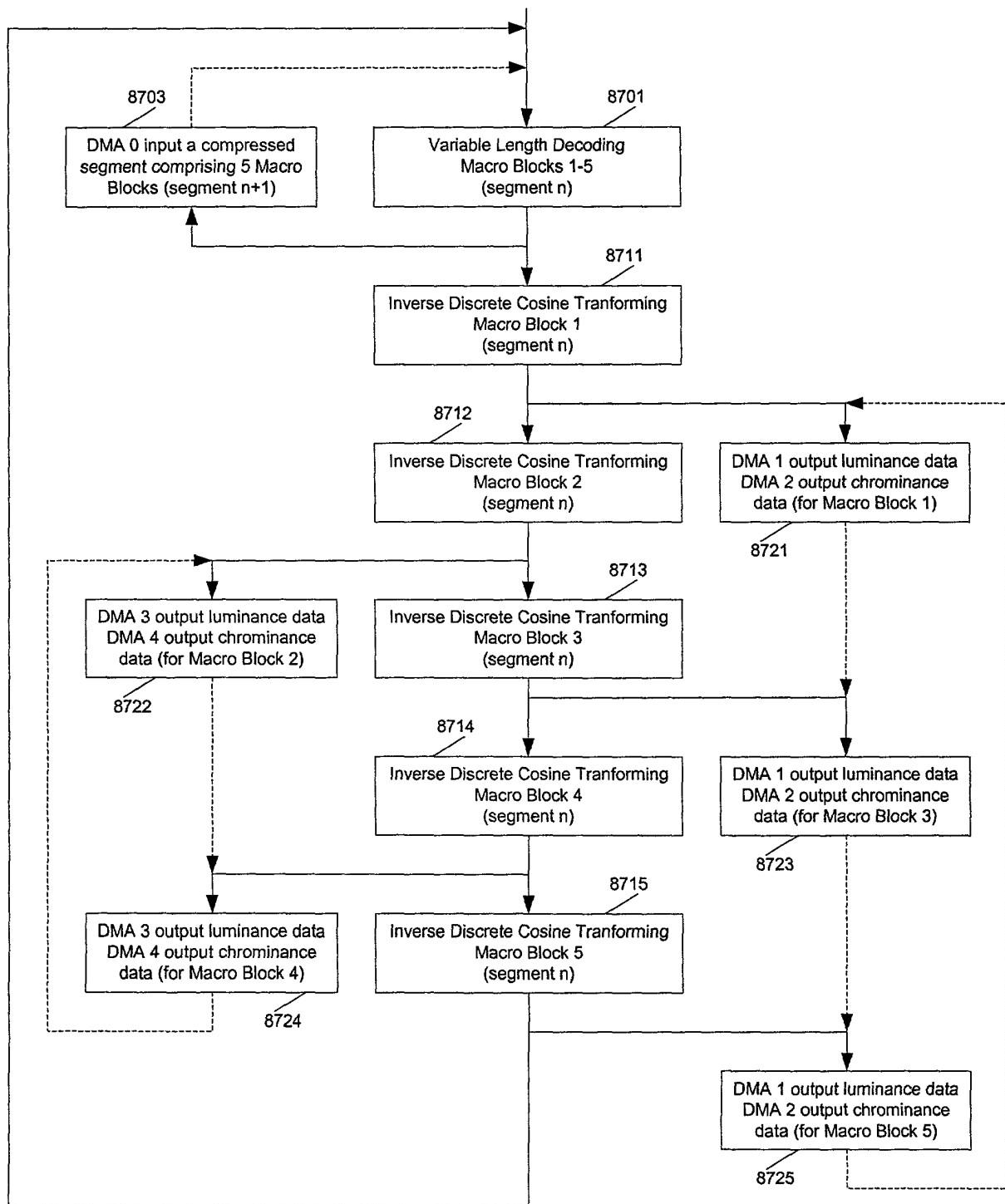


Fig. 67

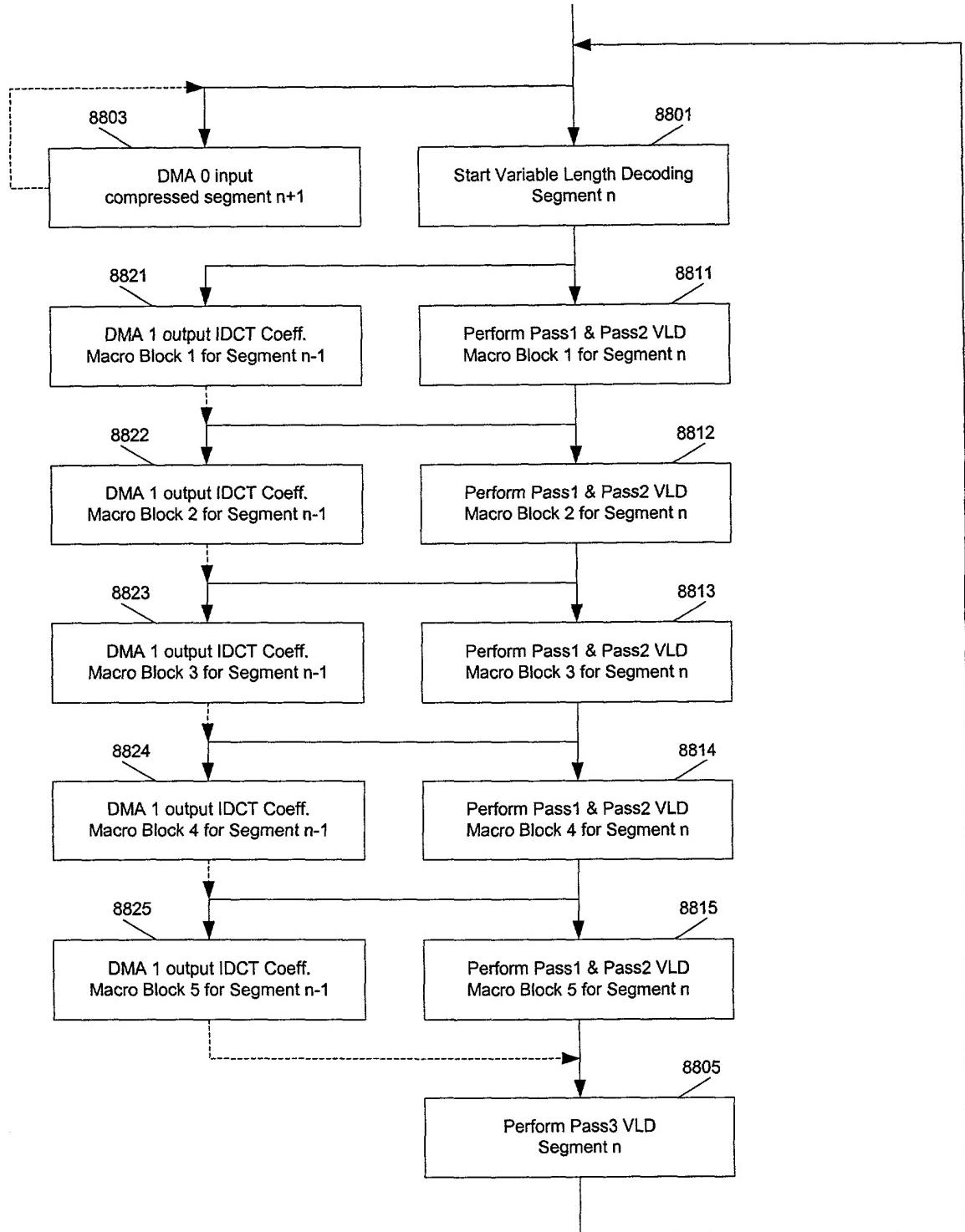


Fig. 68

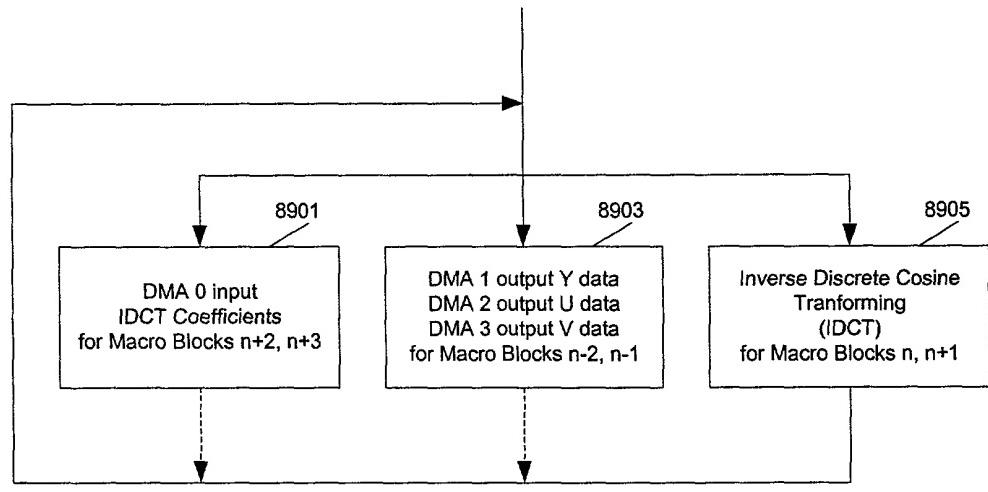


Fig. 69

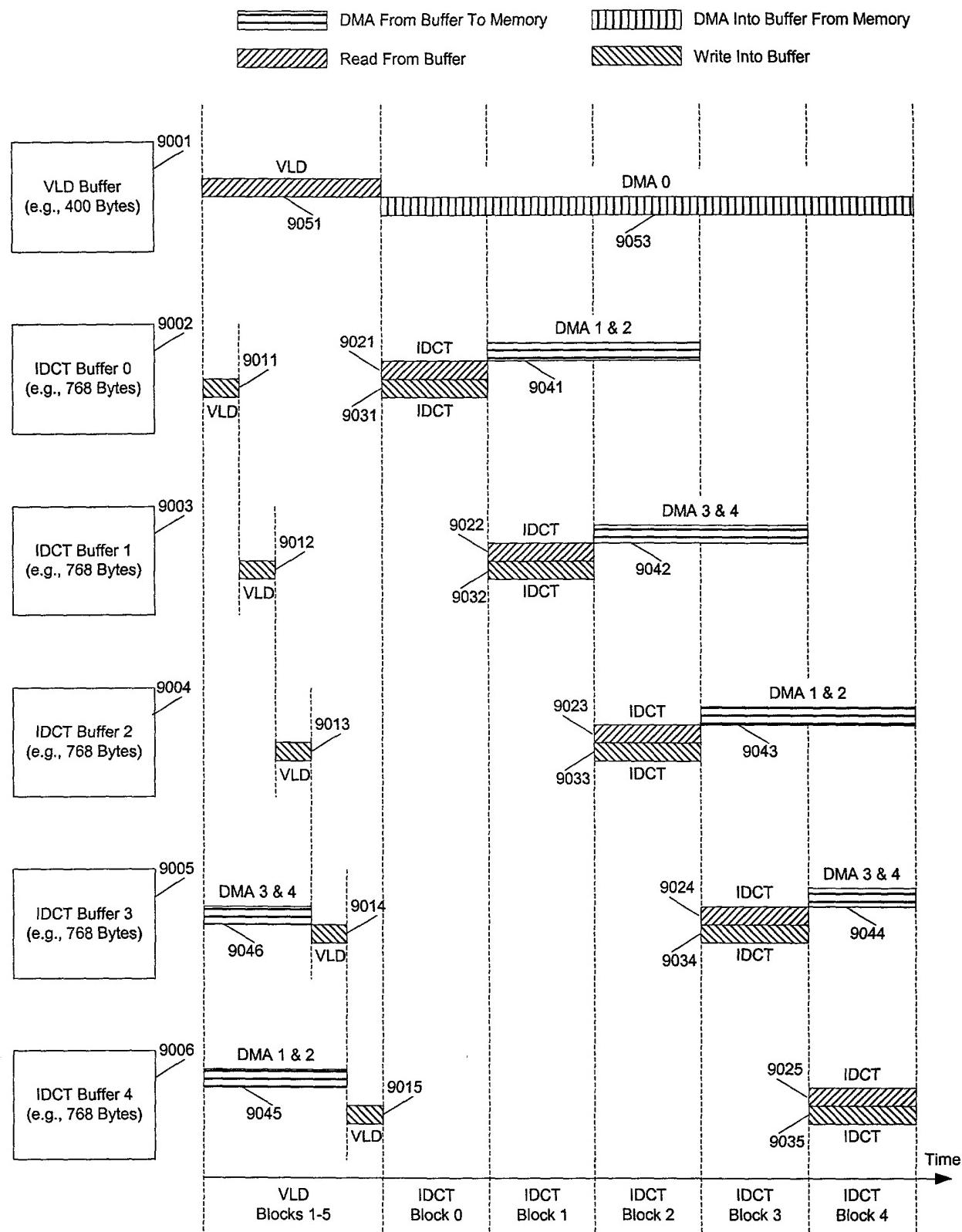


Fig. 70

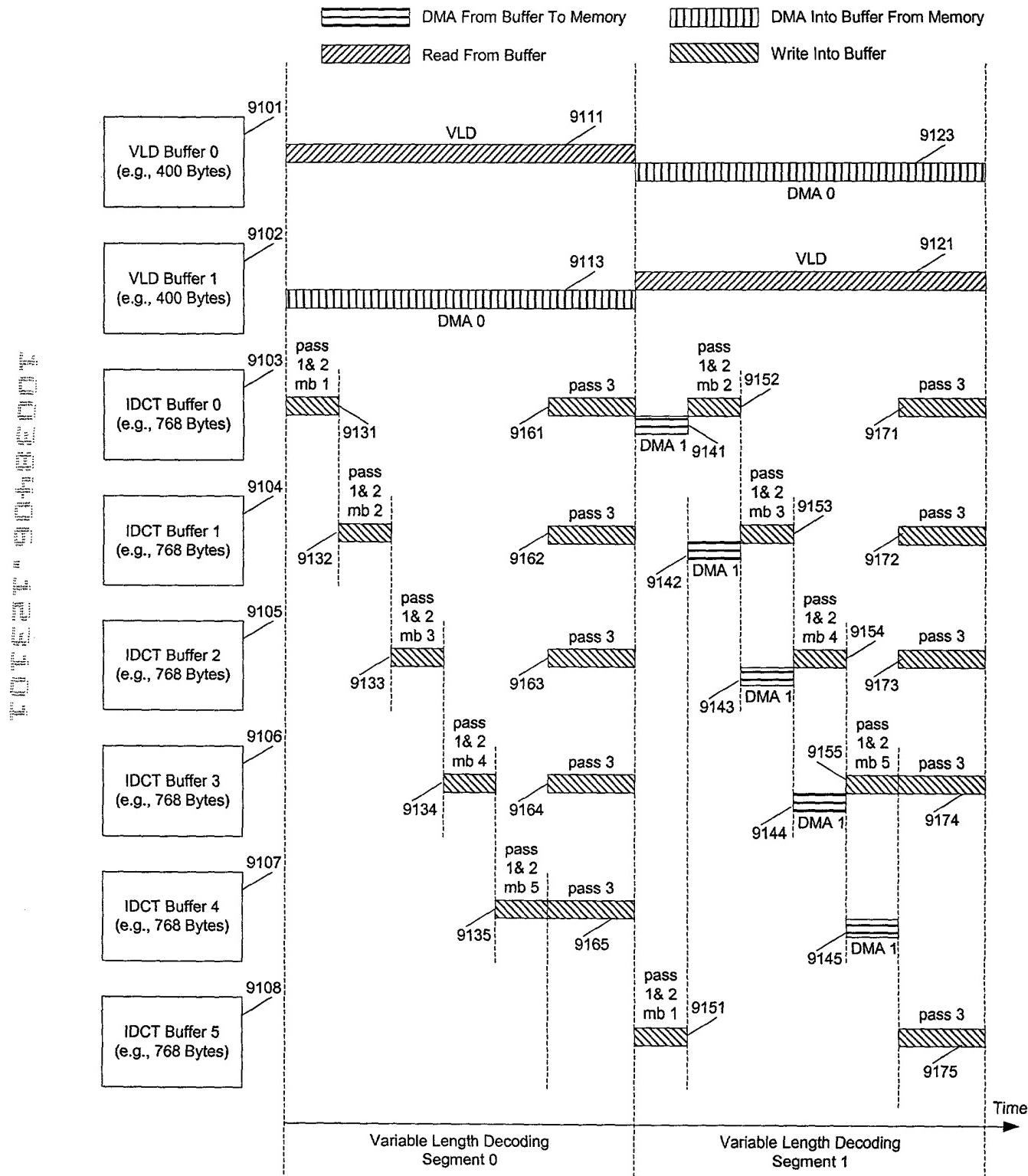


Fig. 71

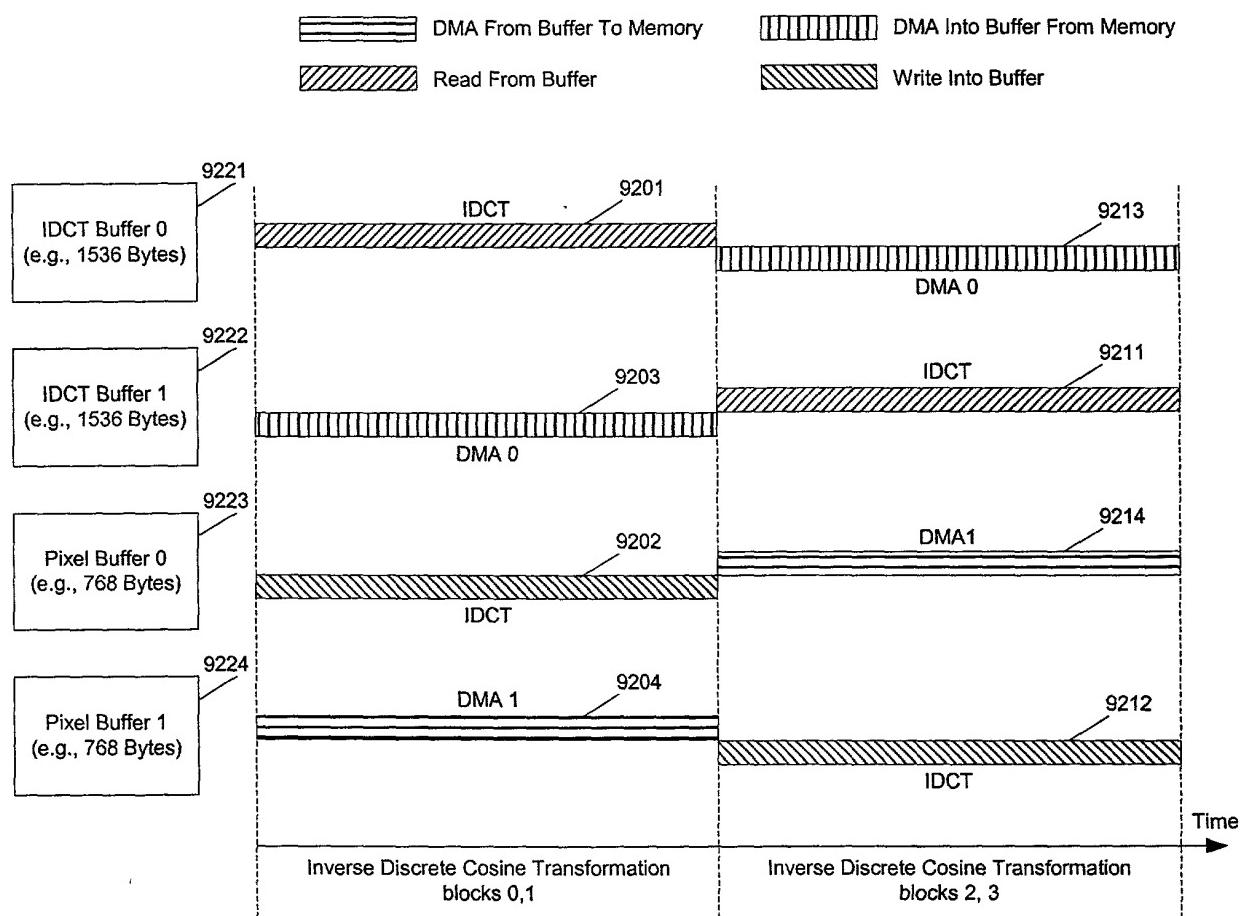


Fig. 72

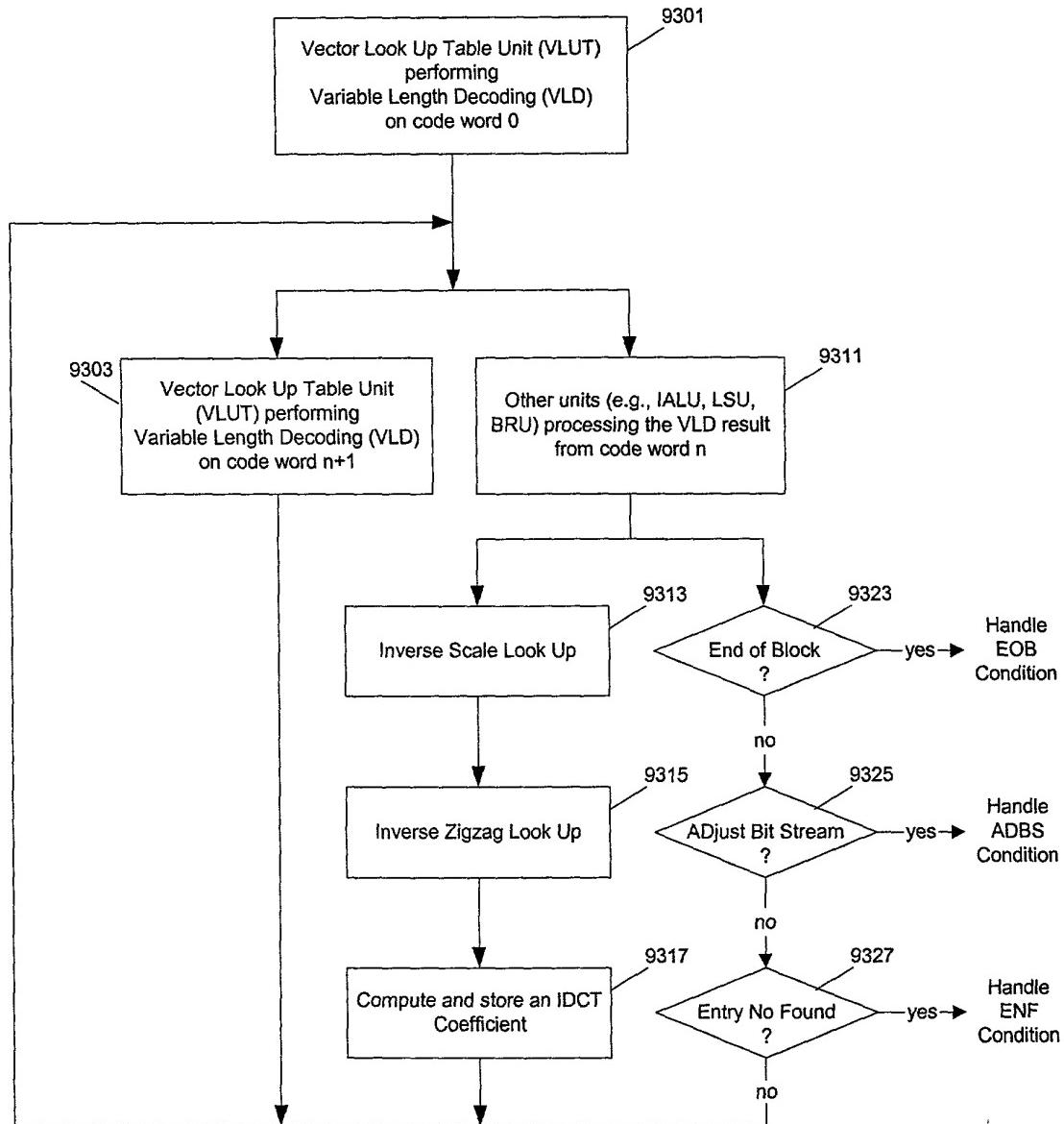


Fig. 73

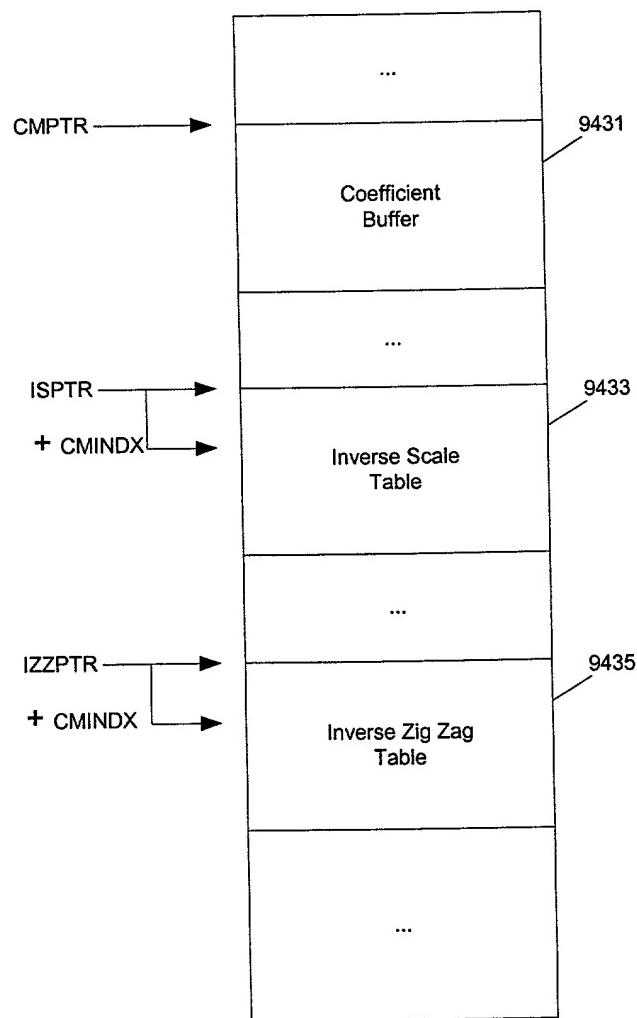
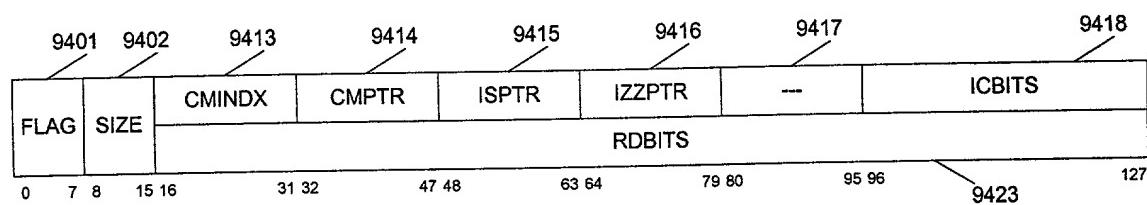


Fig. 74

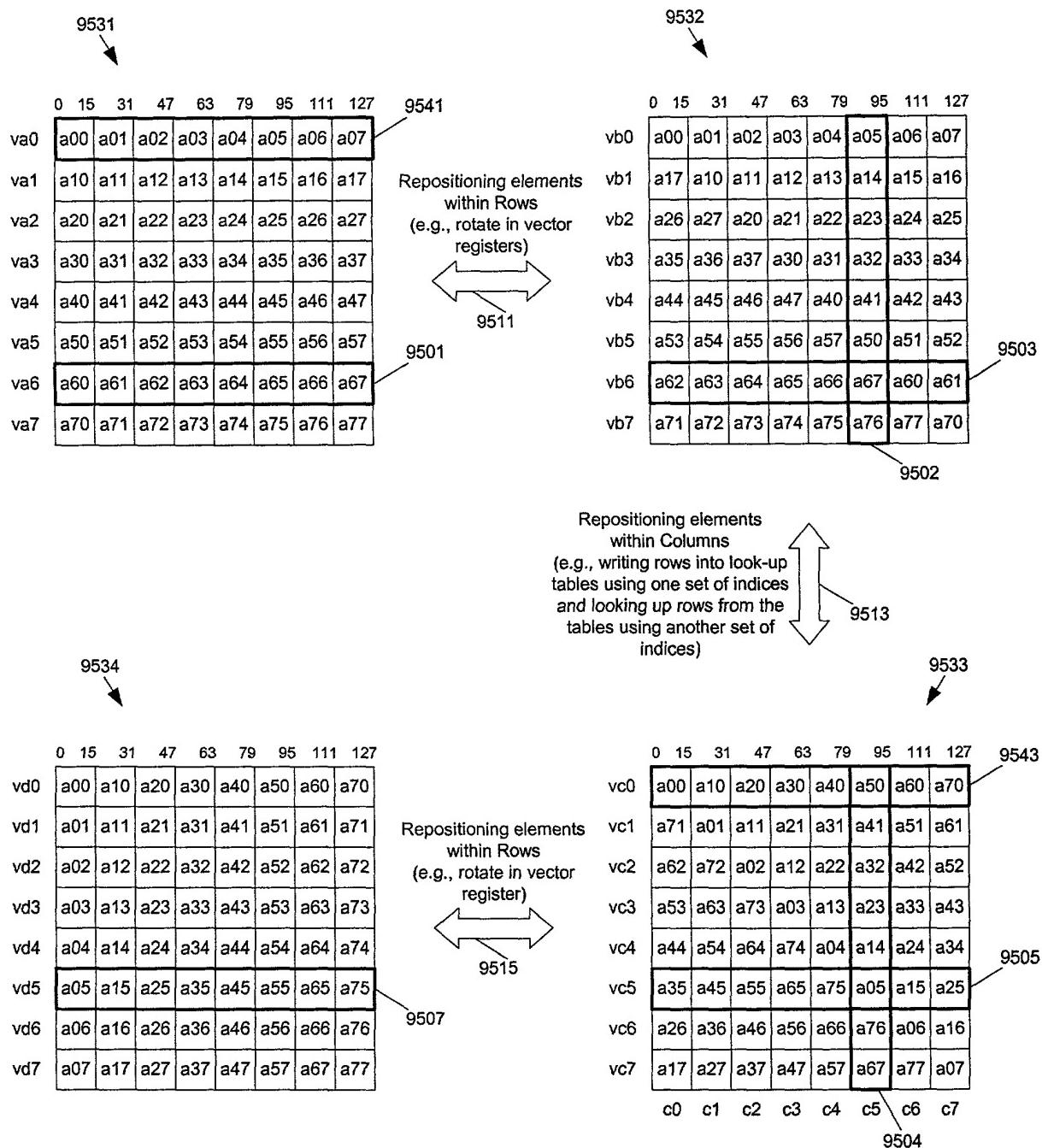


Fig. 75

9631

	0	7	15	23	31	39	47	55	63	71	79	87	95	103	111	119	127
vi0	0	0	1	1	2	2	3	3	4	4	4	5	5	6	6	7	7
vi1	7	7	0	0	1	1	2	2	3	3	4	4	4	5	5	6	6
vi2	6	6	7	7	0	0	1	1	2	2	3	3	4	4	5	5	
vi3	5	5	6	6	7	7	0	0	1	1	2	2	3	3	4	4	
vi4	4	4	5	5	6	6	7	7	0	0	1	1	2	2	3	3	
vi5	3	3	4	4	5	5	6	6	7	7	0	0	1	1	2	2	
vi6	2	2	3	3	4	4	5	5	6	6	7	7	0	0	1	1	9601
vi7	1	1	2	2	3	3	4	4	5	5	6	6	7	7	0	0	9603

T0 T1 T2 T3 T4 T5 T6 T7 T8 T9 T10 T11 T12 T13 T14 T15

9633

	0	7	15	23	31	39	47	55	63	71	79	87	95	103	111	119	127
vj0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
vj1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
vj2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
vj3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
vj4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
vj5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
vj6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
vj7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7

T0 T1 T2 T3 T4 T5 T6 T7 T8 T9 T10 T11 T12 T13 T14 T15

9613

9605

9607

Fig. 76

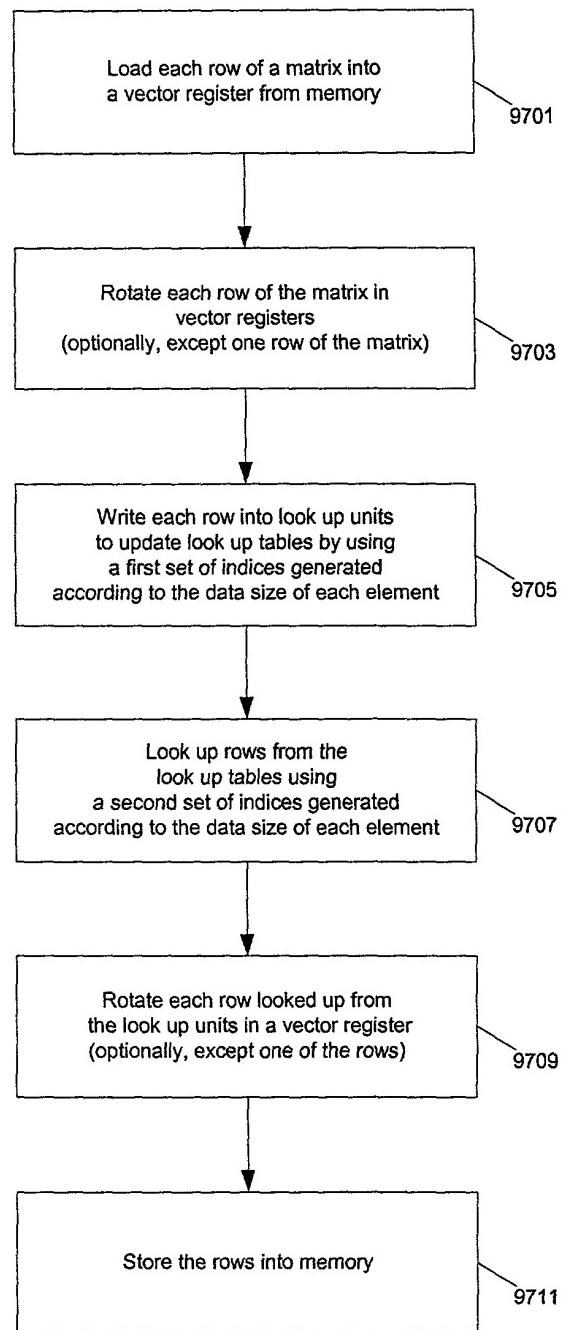


Fig. 77

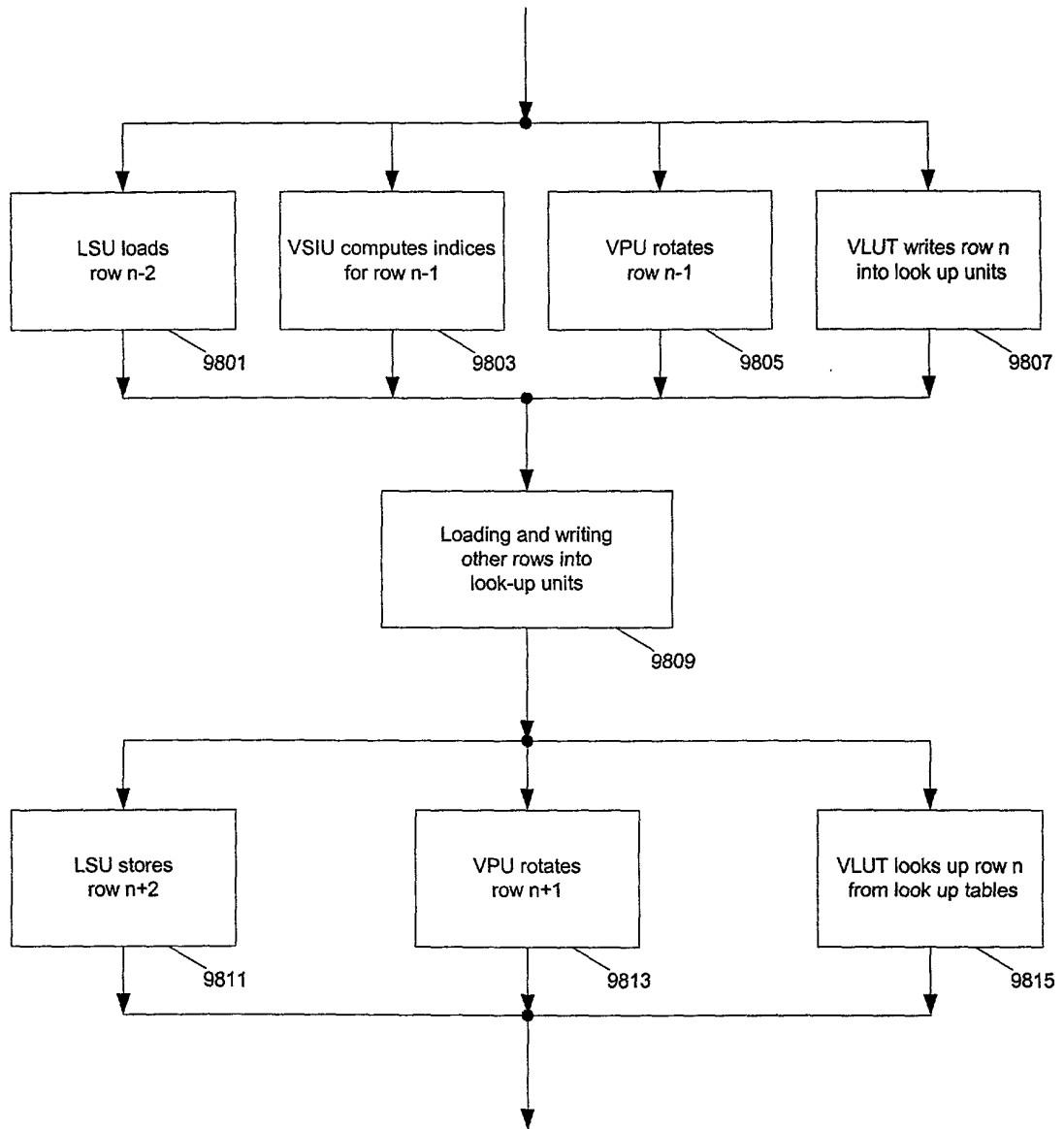


Fig. 78

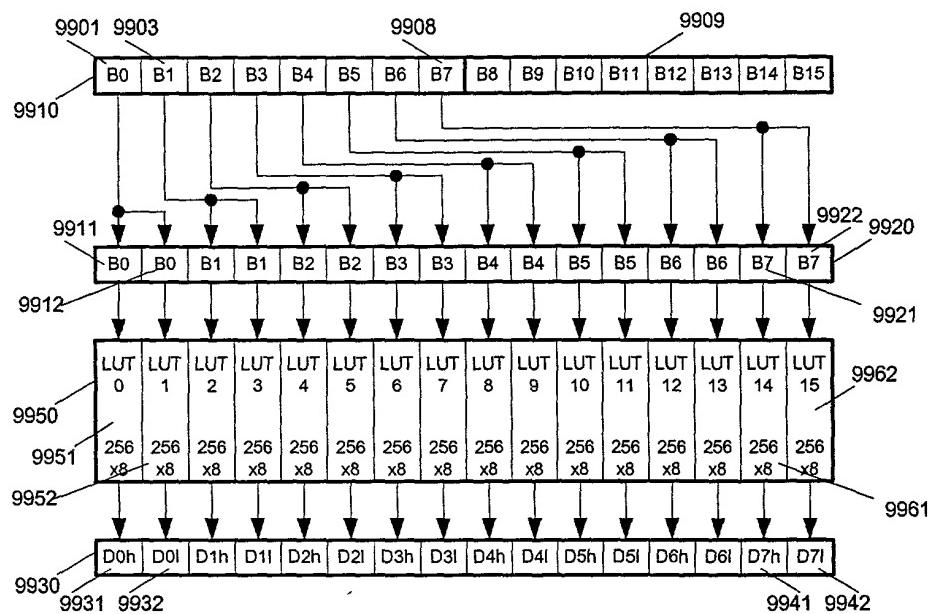


Fig. 79

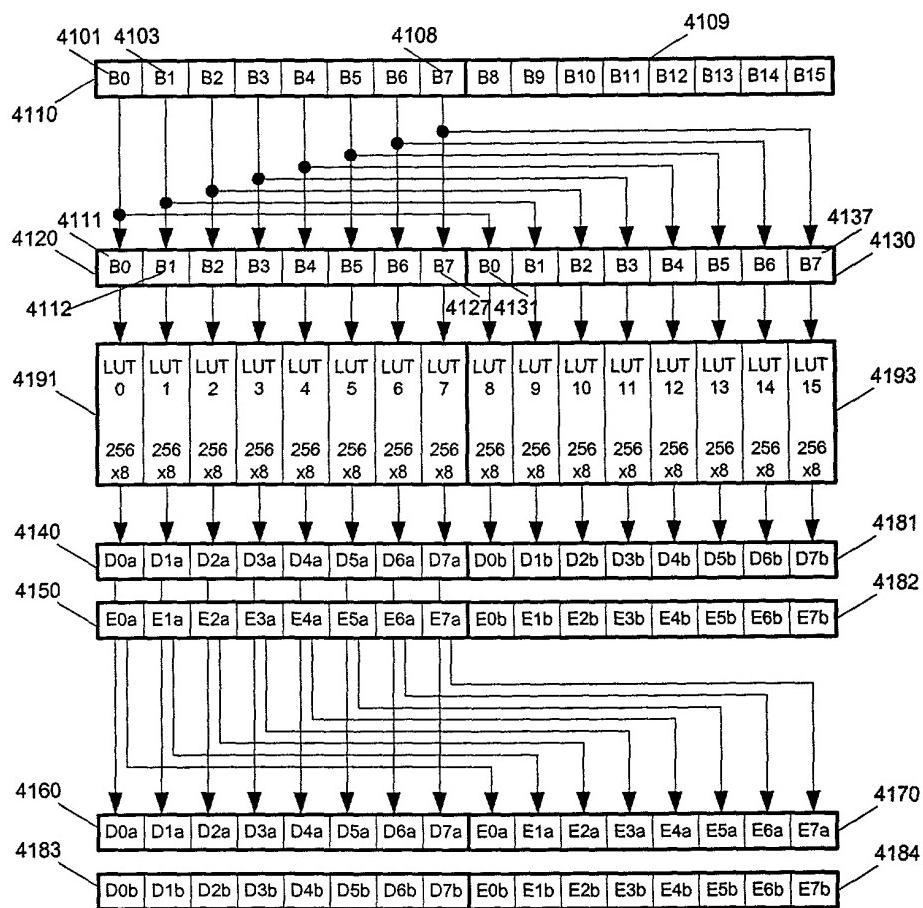


Fig. 80

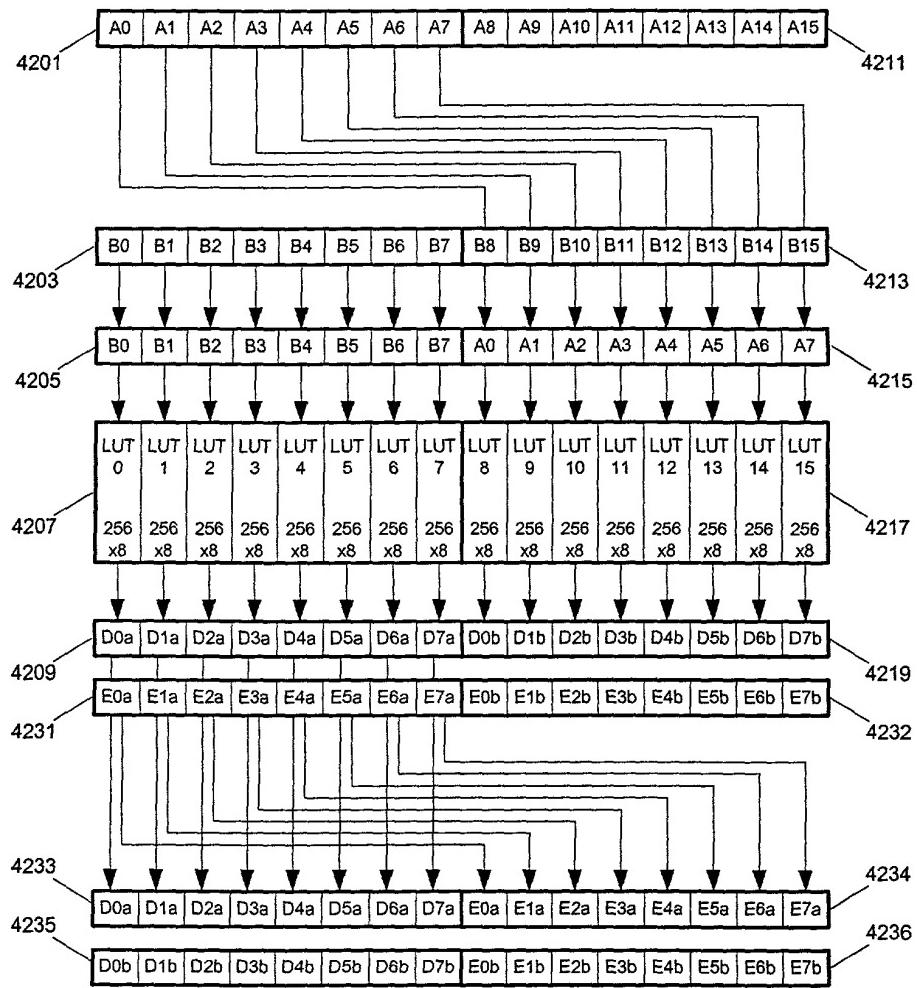


Fig. 81

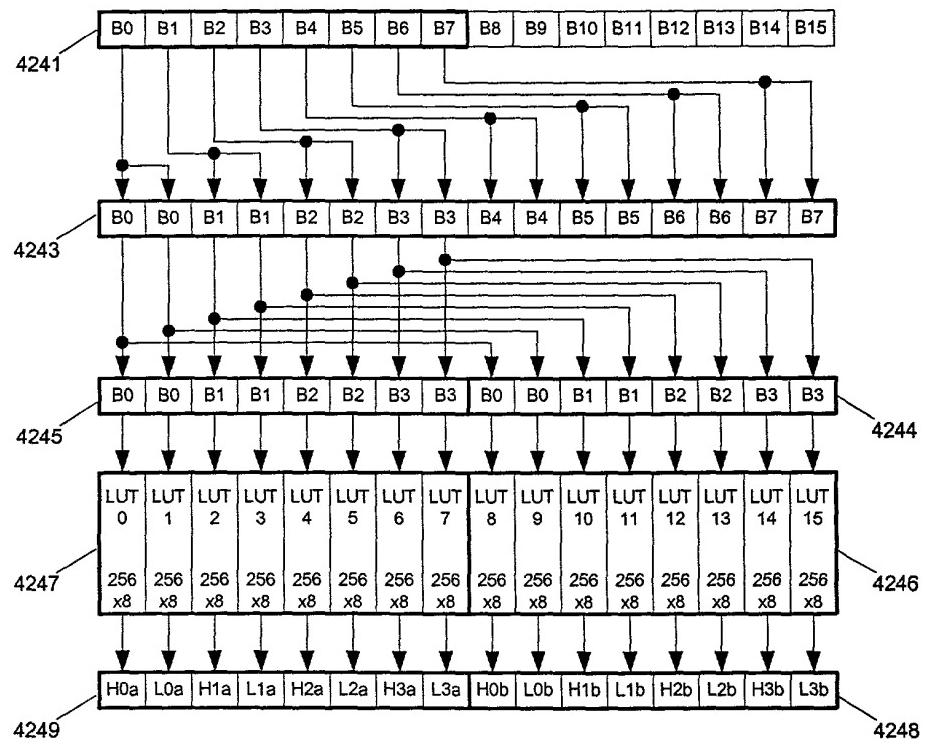


Fig. 82

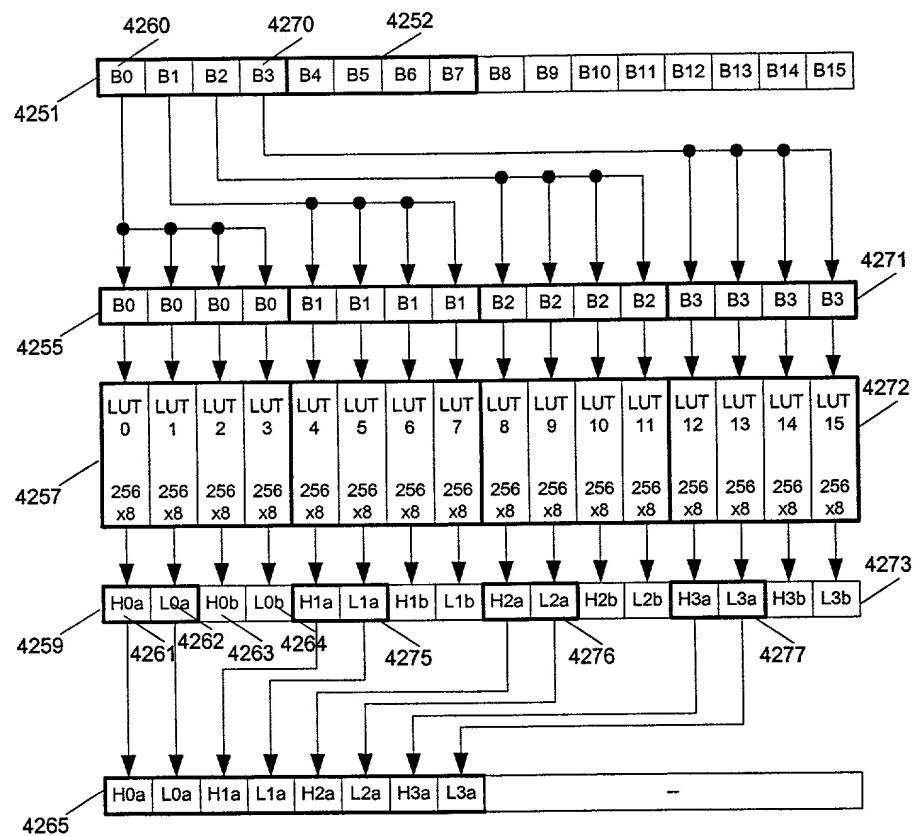


Fig. 83

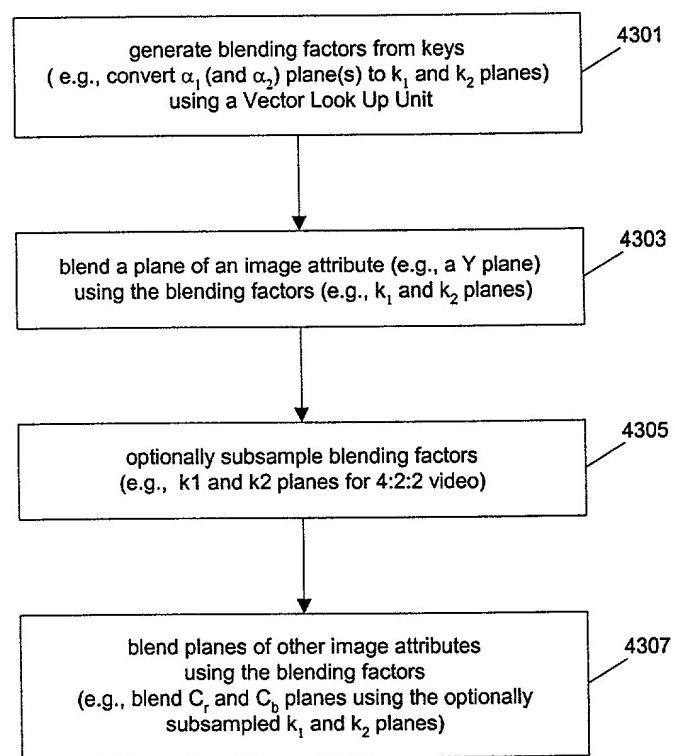


Fig. 84

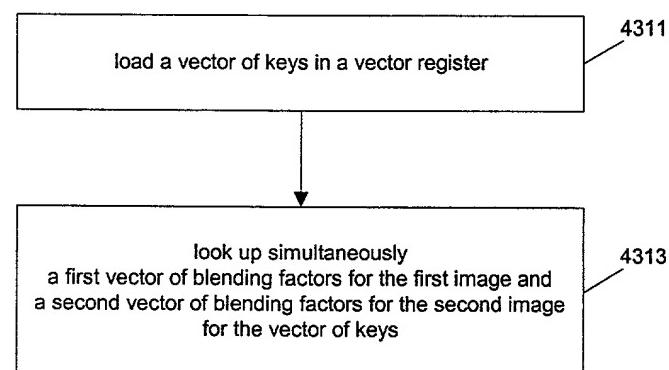


Fig. 85

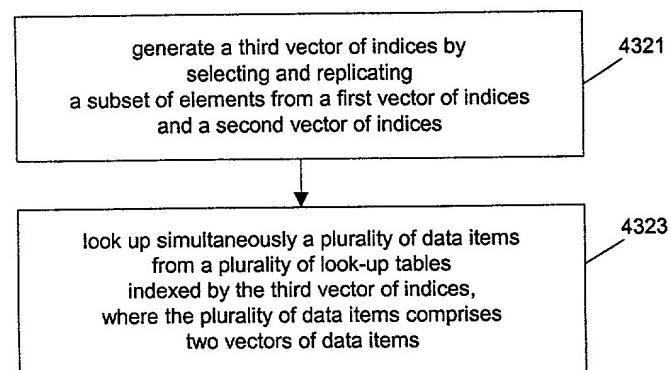


Fig. 86

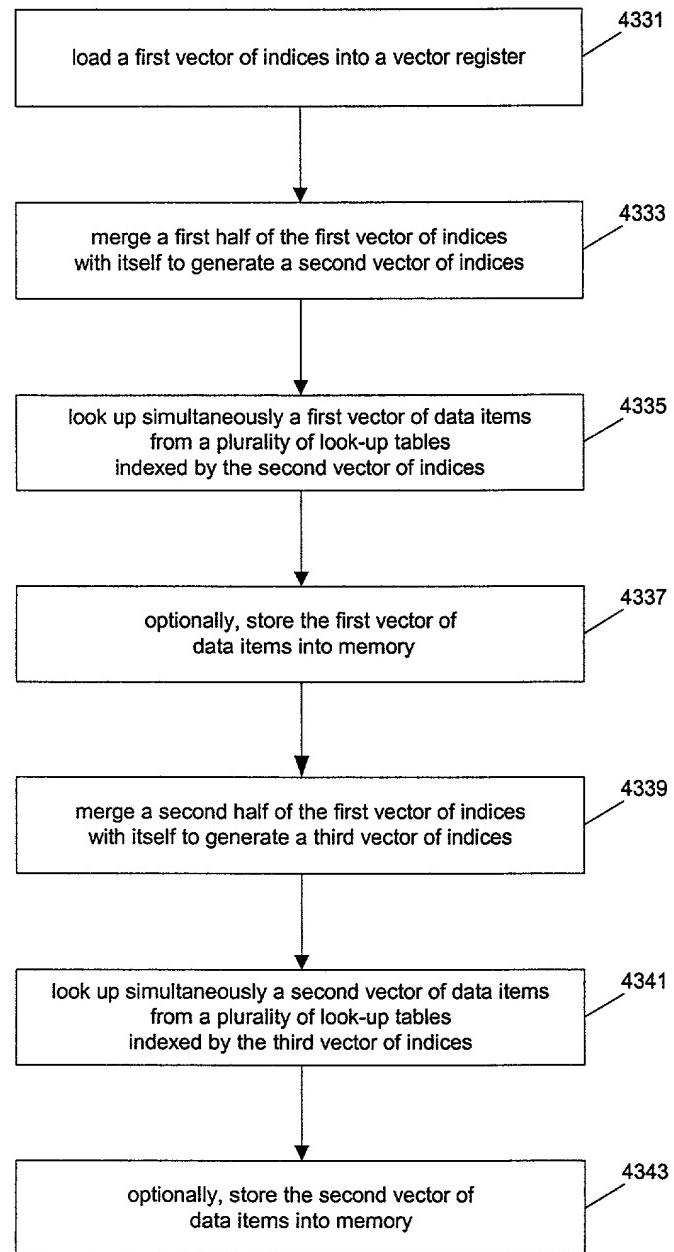


Fig. 87

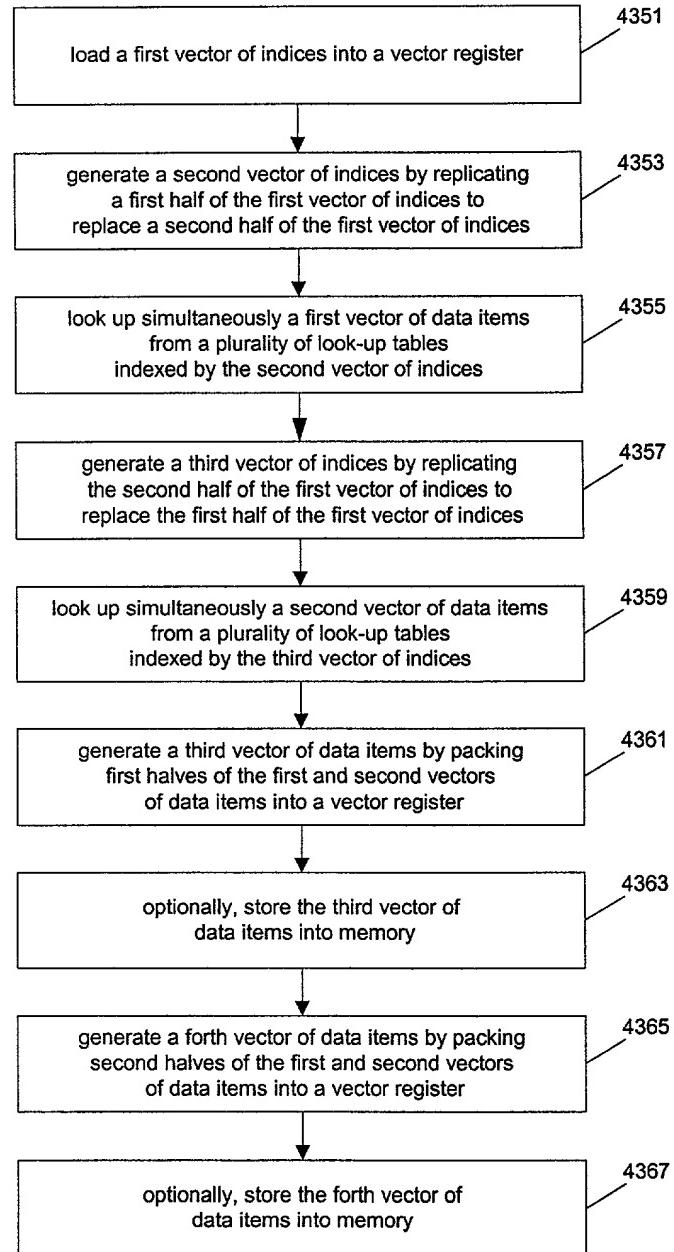


Fig. 88

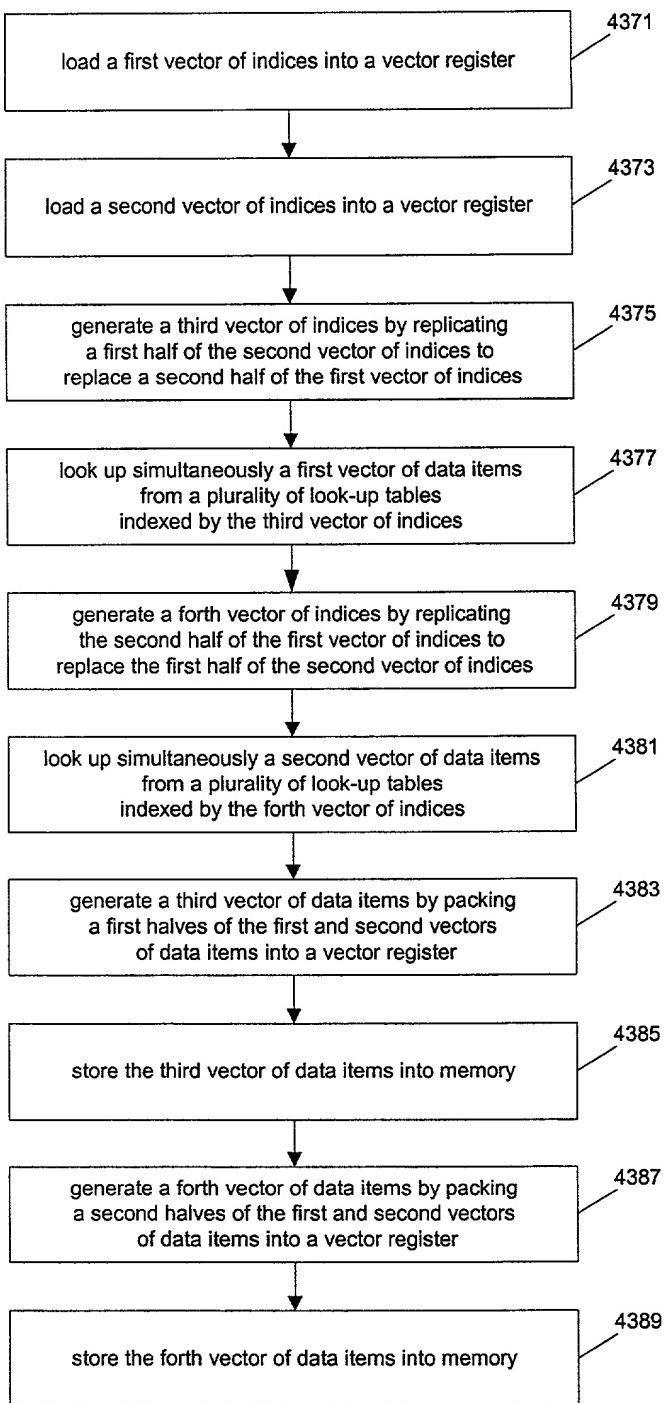


Fig. 89

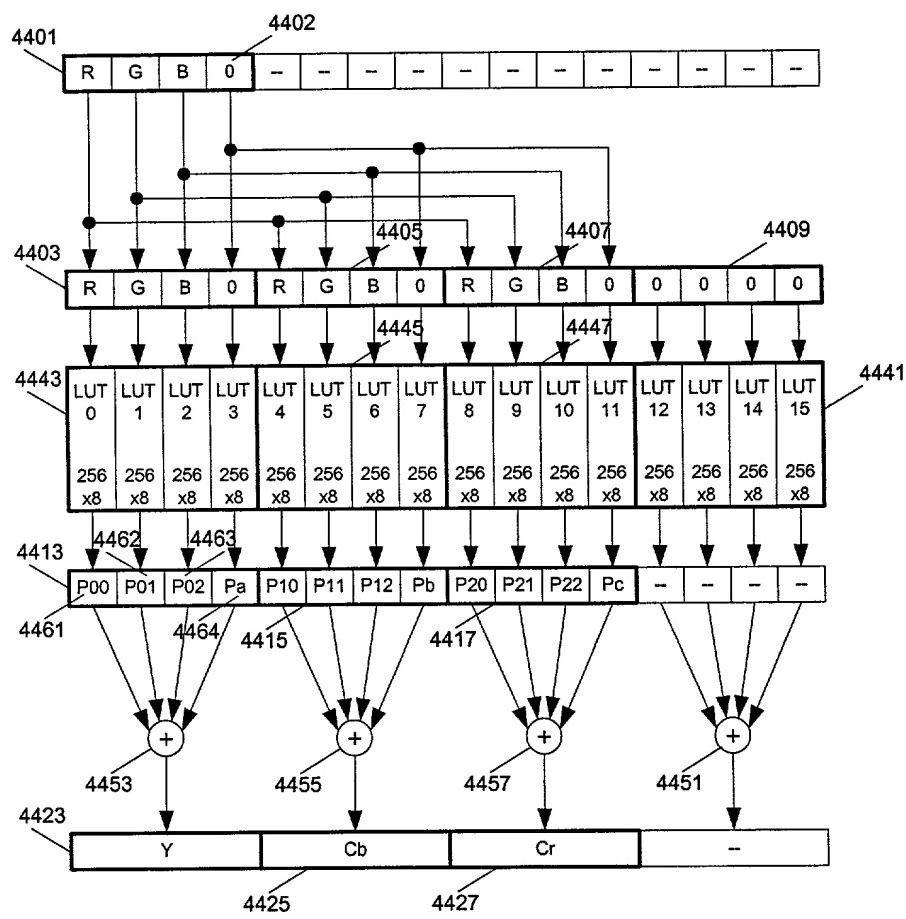


Fig. 90

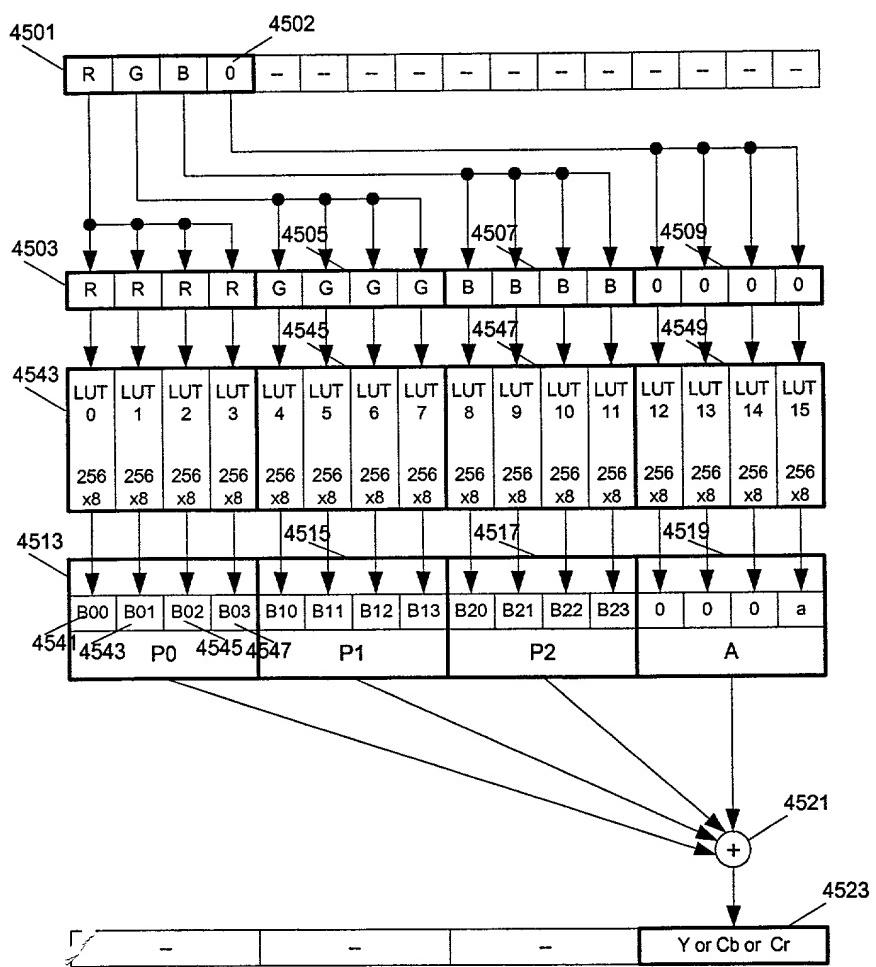


Fig. 91

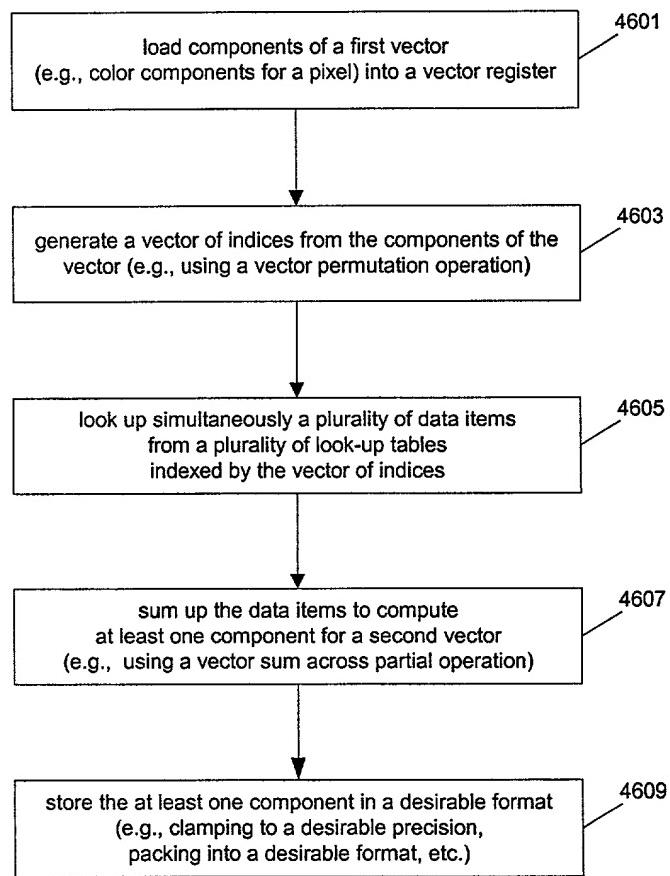


Fig. 92

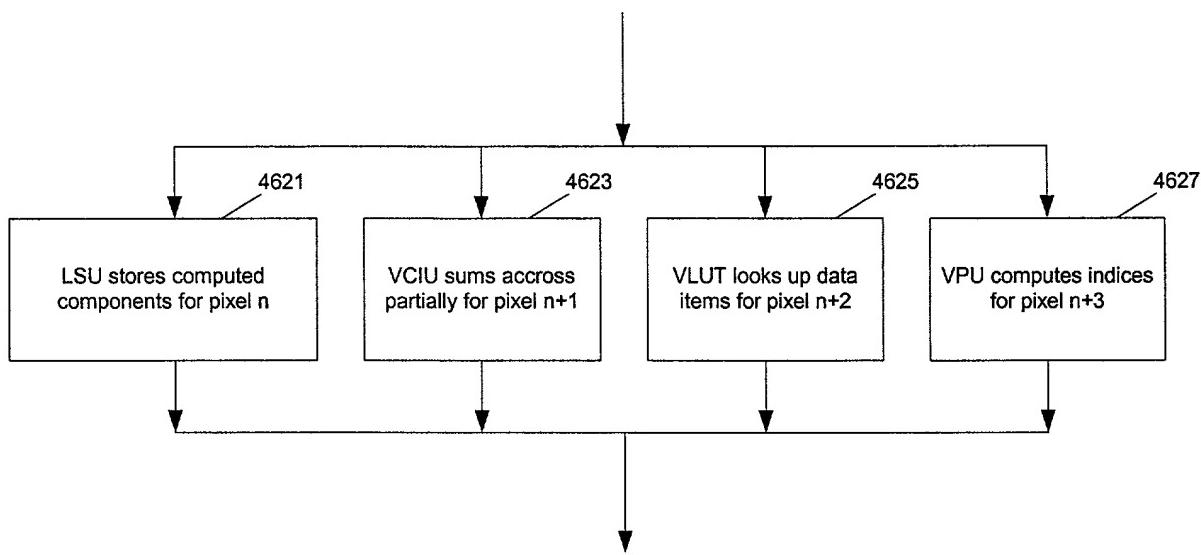


Fig. 93

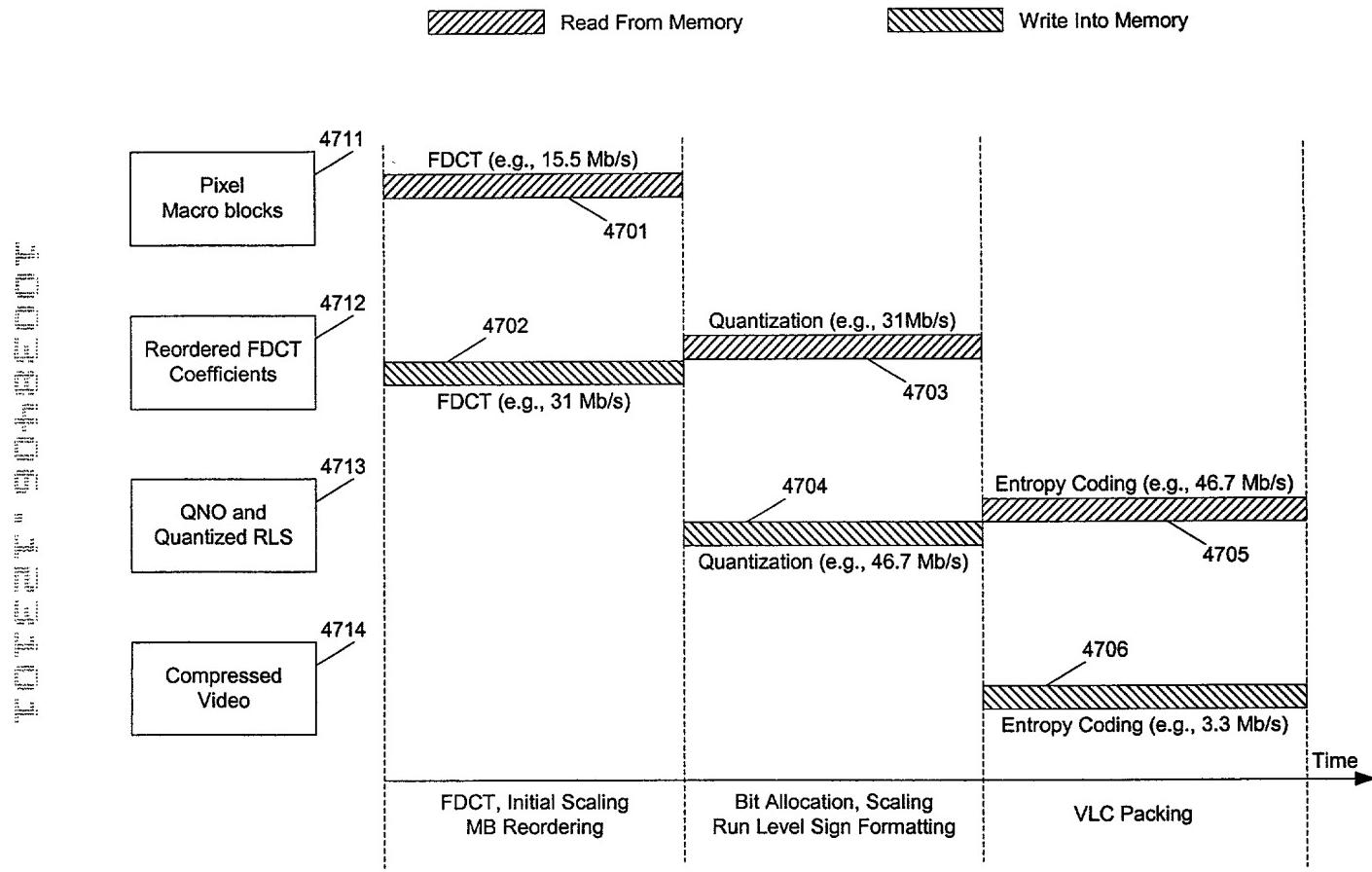


Fig. 94

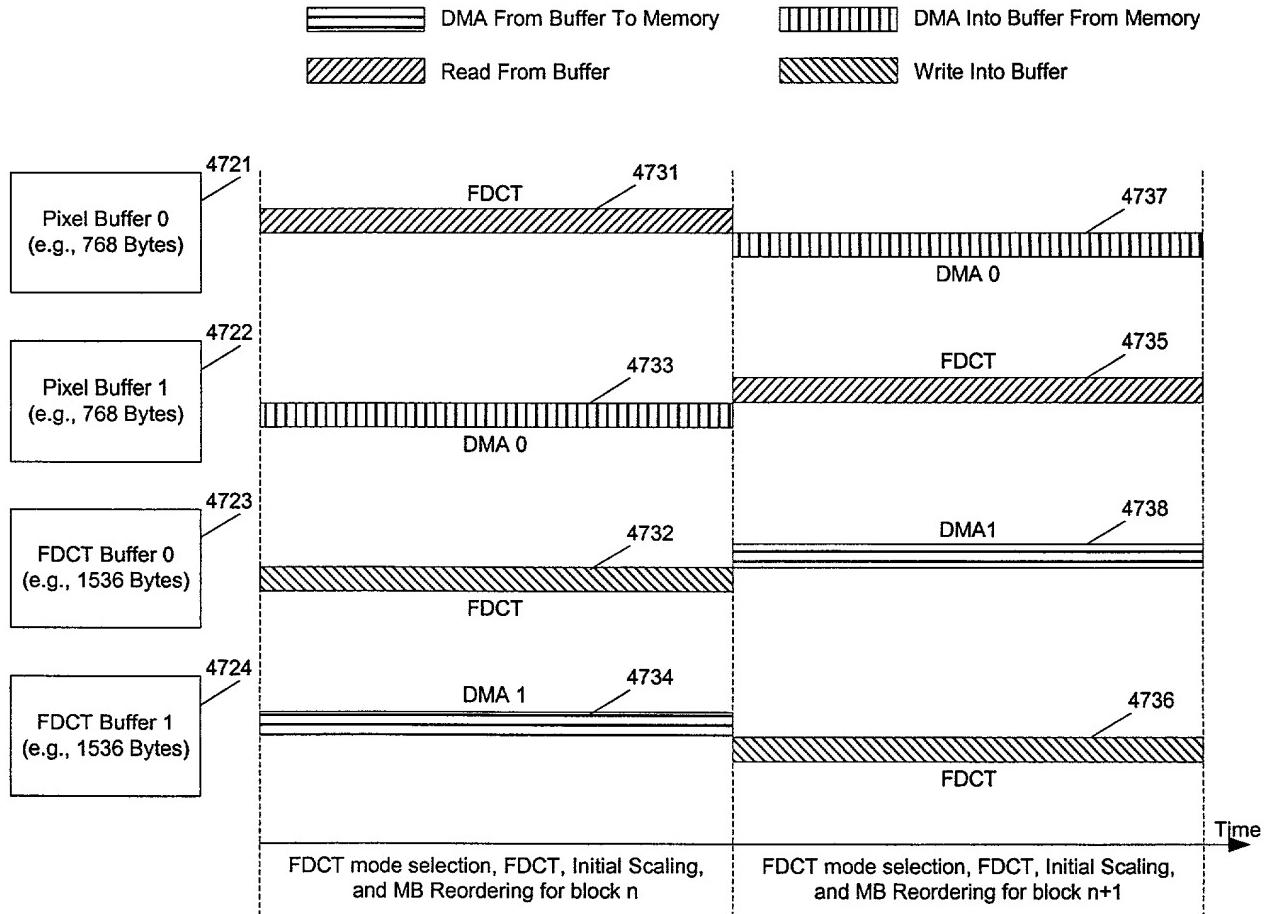


Fig. 95

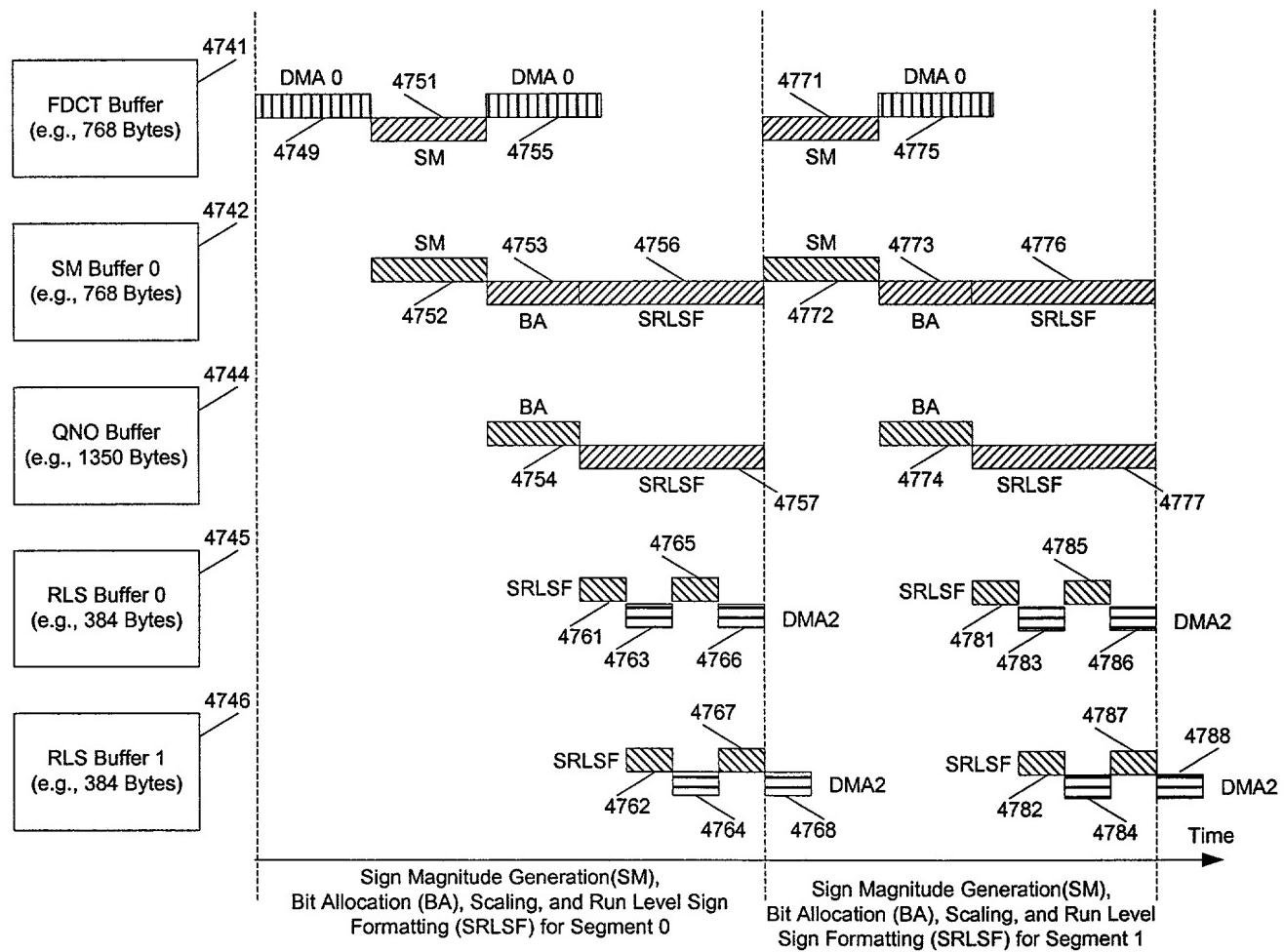
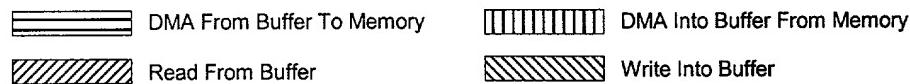
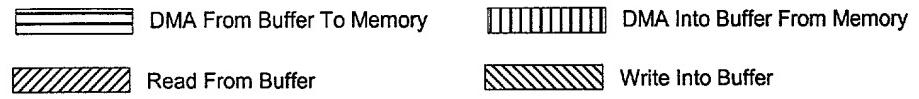


Fig. 96



TOP SECRET//COMINT

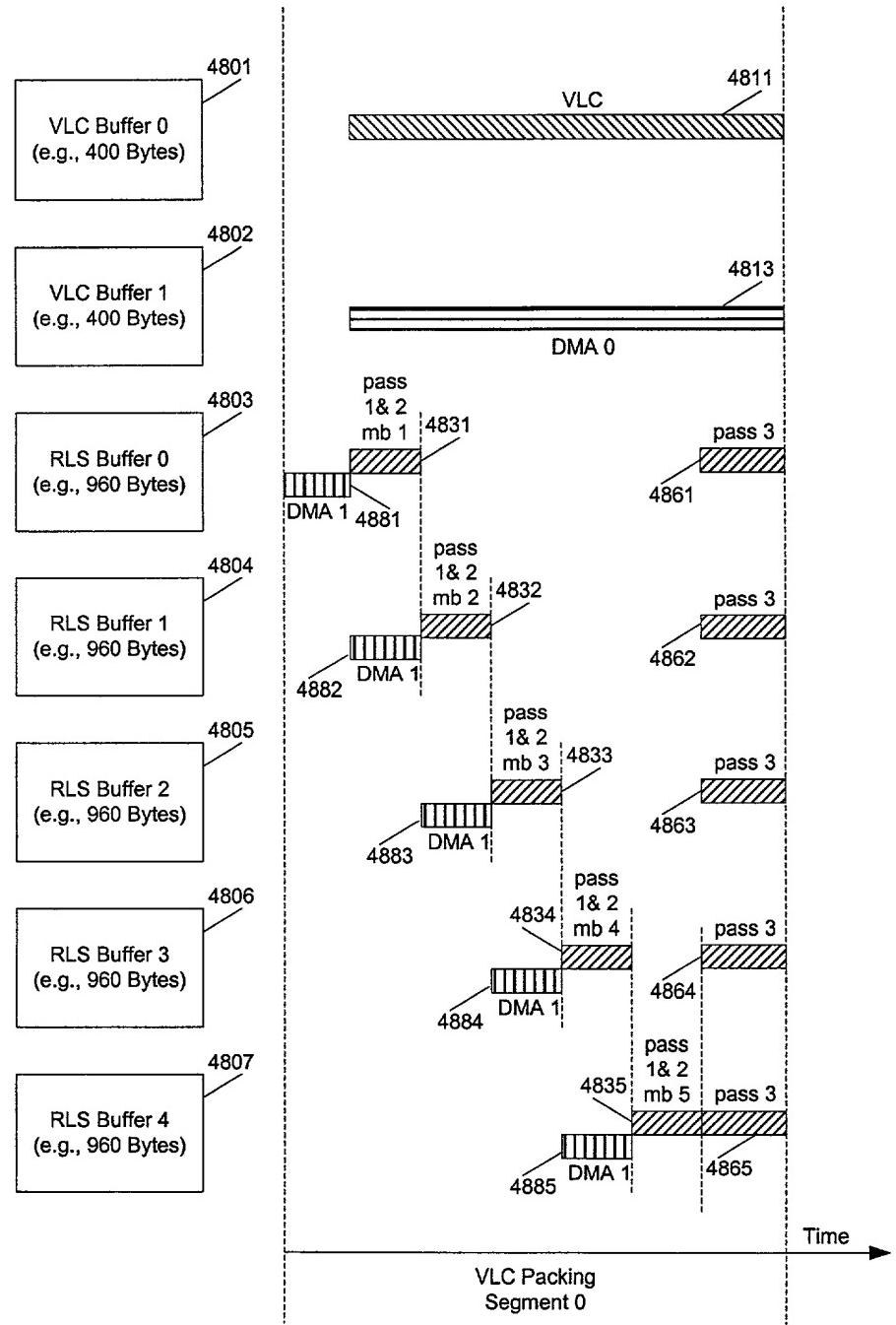


Fig. 97